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INTRODUCTION

International business is multidisciplinary and transformative by design. Not one discipline can explain the complexity of the issues that organizations and societies face today. Boundaries between disciplines are blurred, calling for a more holistic approach to analysis and problem resolution. Making an impact implies grasping the multi-faceted aspects of a problem and being able to suggest creative solutions. Entrepreneurial initiatives need to be analyzed within a complex ecosystem where financial, social, and institutional factors play a key role. The same is true of technology: it cannot be dissociated from its impact on organizations and on work itself.

With its international character, diversity, and commitment to excellence, the International School of Management (ISM) provides an ideal platform for the exchange of thought-provoking ideas and creative solutions. *The ISM Journal of International Business* is the academic vehicle where members of the ISM community share their intellectual output. The papers featured in this issue combine analytical rigor with creativity in suggesting transformative actions. They offer good examples of what social psychologist Kurt Lewin meant when he wrote that "there is nothing so practical as a good theory" (Lewin, 1951).

Ronald Jean Degen analyzes the entrepreneurship ecosystem in Brazil. By identifying the drivers that favor entrepreneurial initiatives as well as the obstacles that hold them back, Degen opens the path towards a more inclusive environment.

Kimberly Reeve and **Jared Pincin** explore the challenges of Corporate Social Responsibility (CSR) in sub-Saharan Africa. The authors look at the role played by CSR in the efforts to curb the "resource curse" affecting mineral-rich countries in the region.

Simon Stoepfgeshoff critically assesses the term "The Future of Work" and suggests a more integrated framework that will allow a better conceptual understanding as well as practical implications for policy makers and business leaders.

Deanne Larson argues that communication is one of the key success factors of data science and analytics projects. The failure to acknowledge the role of communication in such projects will prevent organizations from attaining strategic and operational goals.

Seeking to define the traits that define a true leader, **Tamás Landesz** applies an authentic leadership questionnaire (ALQ) and a Machiavellianism survey (MACH) to a sample of young entrepreneurs. In this context, Machiavellianism is seen as the pursuit of the ends regardless of the means employed.

Patricia Murugami looks at the obstacles faced by women in Kenya in their efforts to achieve leadership positions. By unearthing the impediments that hold women back, the paper paves the way for a true transformation of corporate culture and of Kenyan society as a whole.

A most sincere thanks to all who contributed to this issue.

Enjoy the reading!

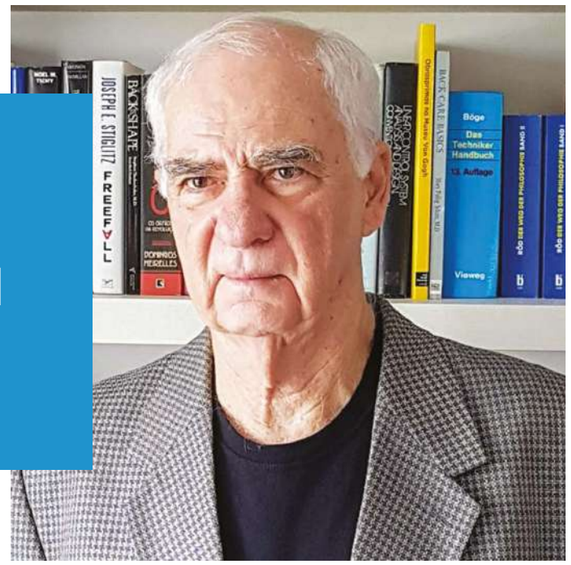
César Baena

Editor-in-chief
Dean and Director of Doctoral Research, ISM

CONTENTS

Cognitive Framework of High-Growth Entrepreneurs in Brazil and Reasons Why They Are Rare

AUTHOR: RONALD JEAN DEGEN



Abstract

There is growing evidence that certain types of entrepreneurs matter more than others when it comes to promoting long-term economic growth because they launch and lead companies with above-average impact in terms of job and wealth creation. Understanding the characteristics of these entrepreneurs—referred to in the literature as high-growth or high-impact entrepreneurs—has become the primary focus of researchers interested in ways to drive economic growth. The purpose of this qualitative multiple case study in Brazil was to understand the characteristics of these high-growth entrepreneurs by examining the development patterns of their cognitive frameworks. This understanding led to findings about the reasons why most Brazilian entrepreneurs fail to develop a cognitive framework similar to these ambitious and innovative high-growth entrepreneurs. These findings can help universities and government policymakers develop programs and policies to support high-growth entrepreneurship in order to in Brazil to improve the country's economic growth.

Keywords: high-growth entrepreneurs, cognitive framework of entrepreneurs, high-growth ambition of entrepreneurs, innovation activities of entrepreneurs, self-efficacy of entrepreneurs

Introduction

Research on entrepreneurs who innovate, create wealth, jobs, and competitive advantage has become the primary focus of researchers interested in ways to drive the economic growth of countries worldwide (Autio, 2005, 2007; Ács, 2006, 2008, 2010; Ács, Parsons, & Tracy, 2008; Morris, 2011). The analysis conducted by Morris (2011) of the data collected by the Global Entrepreneurship Monitor (GEM) in 60 countries over five years demonstrates the importance of these entrepreneurs, who in the literature are known as high-growth or high-impact entrepreneurs. The analysis found that these entrepreneurs started business ventures with an average revenue growth of 20% or more per year and created 38% of the total jobs generated in the country even though they represented only 4% of the entrepreneurs in the dataset.

The purpose of this qualitative multiple case study was to understand the characteristics of high-growth entrepreneurs in Brazil by examining the (a) development patterns or formations over time of their cognitive frameworks (a phrase introduced by Baron [2006] in the study of entrepreneurship to designate frameworks containing cognitive factors or processes that influence entrepreneurs in recognizing and exploring business opportunities), (b) high-growth entrepreneurial opportunities they exploited, and (c) influences of Brazilian environmental conditions. The analysis of why and how high-growth entrepreneurs acquired their cognitive frameworks explains that they became high-growth entrepreneurs because they used their cognitive framework acquired through experience to "connect the dots" between changes in technology, demographics, markets, government policies, and other factors in order to recognize opportunities, evaluate them, and start their business ventures (Baron, 2004a, 2004b; Baron & Ward, 2004).

An understanding of how the high-growth entrepreneurs in Brazil acquired their cognitive frameworks led to findings about why most of the country's entrepreneurs fail to develop a similar ambitious and innovative cognitive framework. These findings can help universities to improve their entrepreneurship programs and government policymakers to design policies to support high-growth entrepreneurship, both of which will eventually improve the country's economic growth.

Theoretical Framework

We constructed the theoretical framework (Figure 1) that includes three clusters of factors to analyze the development patterns of high-growth entrepreneurs' cognitive frameworks that form over time under the influences of Brazilian environmental conditions. The first cluster characterizes the evolution of the *cognitive framework* of high-growth entrepreneurs; the second, the *high-growth entrepreneurial opportunities* they exploited, and the third, the influence of *Brazilian environmental conditions* in fostering high-growth entrepreneurs and creating high-growth entrepreneurial opportunities.

The first cluster, the cognitive framework, integrates three important factors that, according to the literature, play important roles in the process of entrepreneurial opportunity exploitation by entrepreneurs (George, Parida, Lahti, & Wincent, 2016). These factors and the underlying traits are:

- The *cognitive/personality traits* of entrepreneurs that lie in the realm of psychology, which include creativity (Ardichvili, Cardozo, & Ray, 2003; Baron, 2006; Nicolaou, Shane, Cherkas, & Spector, 2009; Ramos-Rodríguez, Medina-Garrido, Lorenzo-Gómez, & Ruiz-Navarro, 2010; Heinonen, Hytti, & Stenholm, 2011); self-efficacy (Shane, Locke, & Collins, 2003; Tominc & Rebernik, 2007; Drnovšek, Wincent, & Cardon, 2010; Cardon & Kirk, 2015); risk-taking (Baron, 2006; Foo, 2011; Li, 2011); the need for achievement (McClelland, 1961/1976; Rauch & Frese, 2007); the need for independence (Rauch & Frese, 2007; Nicolaou, Shane, Cherkas, & Spector, 2009); and alertness or a systematic search for opportunities (Fiet, Piskounov, & Patel, 2005; McMullen & Shepherd, 2006; Fiet, 2007; Westhead, Ucbasaran, & Wright, 2009; Zahra, Gedajlovic, Neubaum, & Shulman, 2009; Sarasvathy, Dew, Velamuri, & Venkataraman, 2010).
- The *knowledge* acquired by the entrepreneurs (Audretsch, 1995; Venkataraman, 1997; Shane, 2000; Degen, 2009; Haynie, Shepherd, & McMullen, 2009; Vaghely & Julien, 2010), which requires three underlying factors: environmental information (Shane & Venkataraman, 2000); knowledge of markets, ways to serve, and customer problems (Shane, 2000); and knowledge of how to innovate (Anderson, Grant, Halcro, Devis, & Genskowsky, 2013, pp. 26–27).
- The *social capital* developed by the entrepreneurs (Baron & Markman, 2000; Aldrich & Cliff, 2003; Tang, 2010; George, wParida, Lahti, & Wincent, 2016).

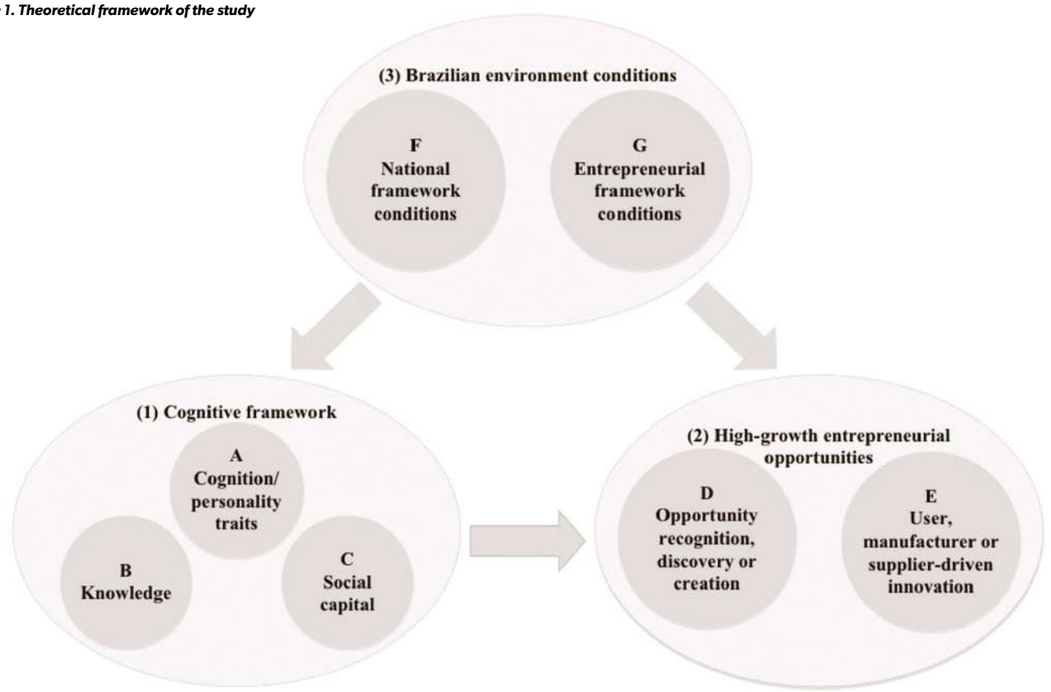
The next cluster, high-growth entrepreneurial opportunities, consists of two factors:

- *Opportunity recognition, discovery, or creation* analyzes how entrepreneurs find entrepreneurial opportunities (Sarasvathy, Dew, Velamuri, & Venkataraman, 2010).
- *User-, manufacturer-, or supplier-driven innovation* analyzes the source of the innovation developed by entrepreneurs (von Hippel, 1988).

Finally, the Brazilian environmental conditions cluster includes two factors highlighted in the literature that influence the cognitive framework of the high-growth entrepreneurs and the surge of high-growth opportunities they developed:

- *National framework conditions* that encompass government policies, social and cultural norms, availability of financing, access to markets, education and capacitation, availability of labor, and economic circumstances that influence entrepreneurs and the surge of entrepreneurial opportunities (Macedo et al., 2013; Singer, Amorós, & Arreola, 2014; Kelley, Singer, & Herrington, 2016; Schwab, 2015, 2016).
- *Entrepreneurial framework conditions* that incorporate the entrepreneurship environment, government policies that promote entrepreneurship, and institutional support for entrepreneurship (Macedo et al., 2013; Singer, Amorós, & Arreola, 2014; Ács, Szerb, & Autio, 2014, 2015, 2016; Kelley, Singer, & Herrington, 2016).

Figure 1. Theoretical framework of the study



The connection between the three clusters (cognitive framework, high-growth entrepreneurial opportunities, and Brazilian environmental conditions) structured the research questions (Figure 2). The connection between the cognitive framework factors of the high-growth entrepreneurs and the factors of the high-growth entrepreneurial opportunities they exploited answers the first research question (RQ1): Why and how did potential entrepreneurs in Brazil develop their cognitive framework to exploit high-growth entrepreneurial opportunities? The connection between the factors of Brazilian environmental conditions and the factors of the cognitive framework of the high-growth entrepreneurs answers the second research question (RQ2): Why and how did Brazilian environmental conditions influence the development of the cognitive framework of the high-growth entrepreneurs? The connection between the factors of Brazilian environmental conditions and the factors of the high-growth entrepreneurial opportunities answers the third research question (RQ3): Why and how did Brazilian environmental conditions create high-growth entrepreneurial opportunities?

Research Method

We chose the explanatory multiple case study research method because the research questions driving the study demanded an in-depth epistemological understanding of the factors that influence the behavior and cognition of entrepreneurs during the process of finding, starting, and building successful businesses (Grégoire, Cornelissen, Dimov, & van Burg, 2015). The study of these factors demands the qualitative epistemological examination of motivations, perceptions, and causal mechanisms as they unfold over time (Bluhm, Harman, Lee, & Mitchell, 2011; Corbin & Strauss, 2015, p. 5).

We used the theoretical framework and research questions to structure the data collection questions and to determine the analytical direction of the study (Yin, 2014, p. 136). We collected the data on the cases through personal interviews with eight high-growth entrepreneurs whom we recruited based on referrals from Endeavor Brazil, entrepreneurship professors, entrepreneurs, and angel-investors (Table 1). These interviews strictly followed the rules of the Institutional Review Board for studies involving human subjects supervised by

Figure 2. The connection between the three clusters of factors of the theoretical framework structured the research questions

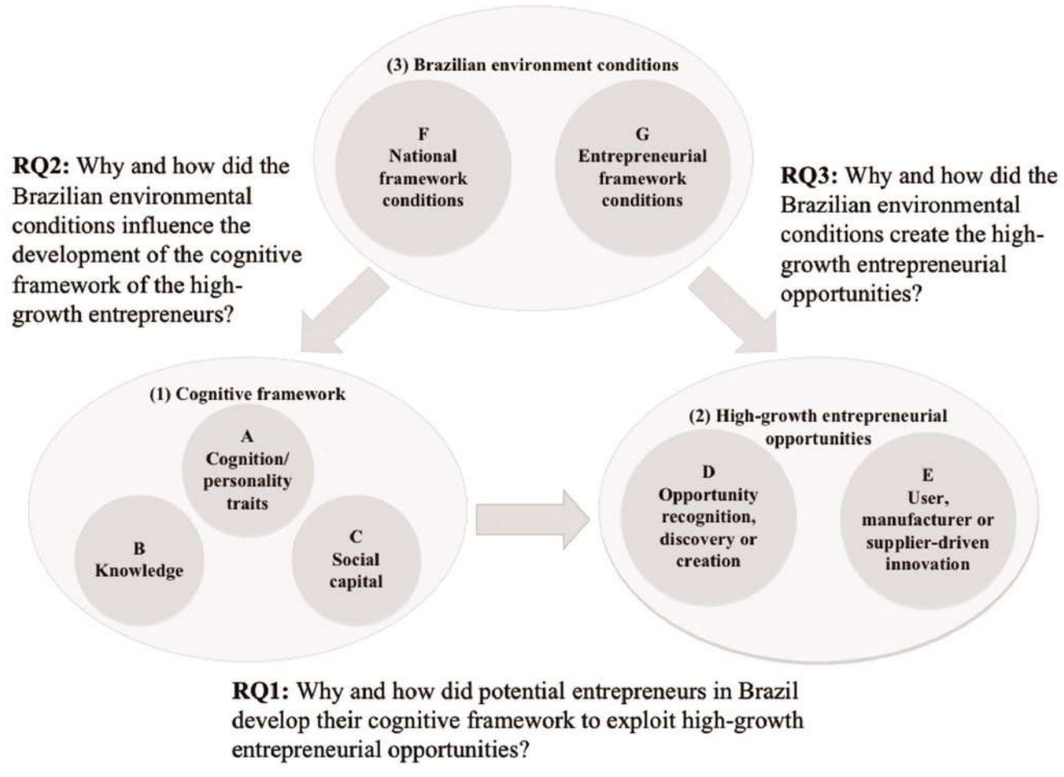


Table 1. Demographic of high-growth entrepreneurs interviewed

Entrepreneurs	E111	E121	E131	E141	E151	E161	E171	E181
Referral	Professor	Investor	Endeavor	Endeavor	Endeavor	Professor	Entrepreneur	Entrepreneur
Gender	Female	Male	Male	Male	Female	Male	Male	Male
Ethnicity	White	White	White	White	White	White	White	White
Age (years)	29	53	41	30	29	44	37	45
Formal education of parents	Father secondary and Mother graduated	Father graduated and Mother graduated	Father graduated and Mother secondary	Father secondary and Mother secondary	Father graduated and Mother graduated	Father graduated and Mother graduated	Father graduated and Mother graduated	Father graduated and Mother secondary
Profession of parents	Father entrepreneur and Mother works with the father	Father entrepreneur and Mother teacher	Father executive and Mother does not work	Father entrepreneur and Mother does not work	Father partner in a consulting firm and Mother works in the same firm	Father executive and entrepreneur and Mother teacher	Father manager and Mother is a medical doctor	Father entrepreneur and Mother does not work
Formal education	Graduated	Graduated	Graduated	Graduated	Graduated	Graduated and Post-Graduated	Graduated	Graduated and Post-Graduated
Previous professional experience (years)	10	24	14	7	3	14	2	17
Worked for a multinational company (years)	5	23	14	0	3	3	0	2
Last job title before starting the business	Manager	President	Director	Manager	Analyst	Director	Apprentice	Director
Previous entrepreneurial experience (successful and unsuccessful)	0	0	1 unsuccessful	1 unsuccessful	1 successful	0	1 successful	2 successful
Age when the high-growth business started (years)	27	49	32	25	25	30	23	40

Table 2. Demographic of the businesses developed by the high-growth entrepreneurs interviewed

Entrepreneurs	E111	E121	E131	E141	E151	E161	E171	E181
Type of business (industry sector)	Service using technology	Manufacturing of sheet-metal products	E-Commerce	Digital products	E-Service (rental)	Digital products	Processing and distribution of food products	Manufacturing and selling of consumer products
Date business started (year)	2014	2012	2007	2011	2012	2001	2002	2010
Start-up financing	Personal savings and Family	Personal savings	Personal savings	Personal savings	Personal savings and Family	Personal savings	Personal savings and Family	Personal savings
Geographic location of the business	City of São Paulo	Interior of the State of São Paulo	City of São Paulo	Interior of the State of Minas Gerais	City of São Paulo	City of Rio de Janeiro	Interior of the State of Rio de Janeiro	City of Rio de Janeiro
Sales in 2015 in Reais	0	17 million	60 million	10 million	5 million	32 million	9 million	15 million
Sales in 2016 in Reais	70 thousand	4 million	120 million	37 million	8 million	52 million	11 million	19 million
Employees in 2015	6	37	180	99	70	200	75	72
Employees in 2016	8	32	250	210	67	404	93	80

Notes:

Some businesses were more resilient than others to Brazil's severe recession - the 2015 GDP was -3.8% and the 2016 was -3.6%.
E111 started developing the technology for its service in 2014 and started sales in 2016.
E121 grew at about 50% per year up to 2015 and then was hit by the 2015-2016 Brazilian recession.
E151 automated its systems and consequently reduced its employees.

the Behavioral Sciences Committee of the author's university. The interviewees signed letters of consent to participate in interviews, the interviews followed a standardized interview protocol, and the interviewees formally authorized the transcripts of the interviews to be included in the research under the condition of anonymity. We verified the data collected through secondary information about the entrepreneurs and the business ventures they started.

We selected eight high-growth entrepreneurs from referrals based on Morris' (2011) definition which stated that high-growth entrepreneurs develop businesses with an estimated revenue growth of 20% or more per year. In addition, we covered the largest possible dispersion in demographic variables to reduce gender, location, and industry bias (Tables 1 and 2). One of the entrepreneurs (E111) had a start-up which did not meet the revenue growth criteria for high-growth entrepreneurs; however, this start-up entrepreneur experienced fast sales growth in 2016 and was therefore included to verify if the results of the interview differed significantly from those of the others.

We employed thematic analysis and coding on the transcripts of the interviews with the high-growth entrepreneurs using NVivo software; following that, we ran frequency matrix coding queries and node metrics for the descriptive analytical analysis. We used pattern-matching logic to compare empirical-based patterns supported by findings from the cases with theoretically-predicted patterns found in the literature to build the study's findings, explanations, and conclusions.

Findings from the Cases

Now presented are the findings for the three research questions (Figure 2) that we designed the multiple case study to answer. These findings flow from the analysis of the demographic data (Tables 1 and 2) and the thematic coding of the interview transcripts using NVivo software and are supported by the theoretical predicted factors found in the literature.

Findings Related to the Demographics of the Entrepreneurs

Analyzing the demographic data of the eight high-growth entrepreneurs (Table 1), we found that seven had parents who belong to the very small, better-educated minority in Brazil. In the mid-1990s, only 0.4% of Brazilian families had two parents who were university graduates and only 4.7% had one parent who graduated (Guedes, 2008). All the entrepreneurs in this study belong to the 11.3% better-educated minority group that had the privilege of a university education (Censo, 2010); they also belong to the 45.5% of whites in Brazil who earn on average almost twice as much as do the 53.6% of mixed and blacks (Censo, 2010; IBGE, 2015b; Slavery´s legacies, 2016). Six entrepreneurs in this study had fathers who are or were entrepreneurs, and two had fathers who are or were managers. All study entrepreneurs financed the start-up of their businesses with their personal savings, and three had additional financing from their families (Table 2). They thus belong to the better-educated Brazilian elite, spontaneously empowered over the rest of the country's population as a consequence of the high inequality in Brazil and illustrated by a GINI index of 48.4% (World Bank GINI Index, 2016) and high-power distance index (PDI) of 69 (Hofstede, 2010). Additionally, they all had professional experience before they started their businesses: six acquired their experience in multinationals, six were managers, five had entrepreneurial experience, and five also had non-professional experience working for charities. The average amount of work experience of the eight entrepreneurs before they started their businesses was slightly over 11 years.

Findings Related to RQ1: Why and how did potential entrepreneurs in Brazil develop their cognitive framework to exploit high-growth entrepreneurial opportunities?

Analyzing the results of the thematic coding of the interview transcripts, we found for each of the three important cognitive framework factors -- cognition/personality traits, knowledge, and social capital -- the underlying traits found in the literature that the high-growth entrepreneurs considered very important for their success.

Cognition/Personality traits

All eight entrepreneurs considered *self-efficacy* (Shane, Locke, & Collins, 2003; Tominc & Rebernik, 2007; Drnovšek, Wincent, & Cardon, 2010; Cardon & Kirk, 2015) to be very important for their success; some of the reasons given were: "I always believed that we could innovate by making a better product or more intelligent product" (E21), and "I have great confidence in my skills to develop any business" (E161). They all also considered *determination, need for achievement, and/or high-growth ambition* (McClelland, 1961/1976; Rauch & Frese, 2007) to be very important for their success, and a reason given was: "I want to leave a legacy for my children and Brazilian society" (E131). All entrepreneurs said that they were *alert for opportunities or systematically searching for opportunities* (Fiet, Piskounov, & Patel, 2005; McMullen & Shepherd, 2006; Fiet, 2007; Westhead, Ucbasaran, & Wright, 2009; Zahra, Gedajlovic, Neubaum, & Shulman, 2009; Sarasvathy, Dew, Velamuri, & Venkataraman, 2010), such as: "I and my partner [sic] systematically searched for a business opportunity that was innovative, had the potential to grow, and was good for all involved" (E151). Only five considered *managing risk* (Baron, 2006; Foo, 2011; Li, 2011) to be very important for their success: "Sharing of the risk with my partner helped me a lot in overcoming the natural risks of starting a new business" (E151).

Self-efficacy is the most important characteristic of these high-growth entrepreneurs and includes, according to Shane, Locke, and Collins (2003), determination, need for achievement, high-growth ambition, and managing risk. The authors explain that entrepreneurs who have high self-efficacy are likely to exert more effort for a greater length of time, persist through setbacks, and develop better plans and strategies for the task.

Knowledge

All eight entrepreneurs considered *knowledge of markets, knowledge of customer problems*, or *knowledge of ways to serve* (Shane, 2000) to be very important for their success; some of the reasons were: "I was 49 years old, had substantial knowledge and experience in the business, and felt prepared when the multinational decided to close the factory of the Brazilian subsidiary I managed. I saw the opportunity to continue supplying products to the Brazilian clients and decided to start my own business" (E121), and "Because I had worked selling products to the C class in Brazil, I saw the opportunity of selling a similar product to this class with better performance and at a slightly higher cost than those that were being offered to them in the market by the large companies" (E181). Six entrepreneurs considered *knowledge from multinationals* to be important for their success, as one said: "I only worked for multinational companies in Brazil, and all my professional knowledge was acquired working for them" (E131).

According to Shane (2000), the entrepreneur's prior knowledge directly influences the recognition of an entrepreneurial opportunity and is based on knowledge of markets, customer problems, and ways to serve; high-growth entrepreneurs acquire this knowledge through their professional work experiences. Noteworthy also is that six of the eight entrepreneurs acquired this knowledge working for multinationals.

Social capital

Six entrepreneurs considered *support from professional network and support from personal reputation* (Baron & Markman, 2000; Tang, 2010; George, Parida, Lahti, & Wincent, 2014) to be very important for their success; interviewees noted: "Because the multinational closed the factory that I managed in Brazil, I used all the relationships that I had

developed with clients, suppliers, and collaborators to develop my business" (E121), and "My professional reputation, besides opening the doors of large clients, allows me to guarantee the credit of my supplier, who does not have credit to buy the raw material he needs to supply us" (E181). Five entrepreneurs considered *support from family* (Aldrich & Cliff, 2003) to be very important for their success, for example: "I followed the model recommended by my father: work for a multinational, learn the business, and, when prepared, start your own business" (E121).

The eight entrepreneurs considered their social capital to be very important for success in starting and developing their businesses. According to Baron and Markman (2000), social capital provides entrepreneurs with an important type of credential, a favorable social identity that can be converted into significant tangible benefits. One benefit is enhanced access to information, and another benefit is increased cooperation and trust from others.

Findings Related to RQ2: Why and how did Brazilian environmental conditions influence the development of the cognitive framework of the high-growth entrepreneurs?

Analyzing the results of the thematic coding of the interview transcripts, we found that for each of the two important factors in Brazilian environmental conditions—national framework conditions (Macedo et al., 2013; Schwab, 2015, 2016; Drexler & Herrington, 2015) and entrepreneurial framework conditions (Macedo et al., 2013; Singer, Amorós, & Arreola, 2014; Drexler & Herrington, 2015; Ács, Szerb, & Autio, 2014, 2015, 2016)—the study entrepreneurs considered the positive or negative influences on their cognitive frameworks to be important for the start-up and development of their businesses.

National framework conditions

All eight entrepreneurs stated that their decision to start a business was *not the result of government policy or incentive*, and seven said they had *no government or institutional support*. Seven complained about the *complicated and costly labor and tax laws*: "I have to invest a lot of my time to take all the necessary precautions, to follow all the labor and fiscal rules correctly so as not to have problems" (E111), and "The Brazilian labor and tax laws are barriers to entrepreneurship; they are obsolete, complicated, and costly" (E161). Six explained that they had to overcome *social and cultural barriers* to start their businesses; some of the reasons given were: "Firms, even Brazilian firms, have a prejudice against buying technology from Brazilian firms; they don't believe that Brazilian technology is equal to that of large global firms" (E141), and "At the beginning of my business, I sold and delivered my product personally, and my middle-class acquaintances mocked me because I was doing work that they considered humiliating" (E171). However, seven entrepreneurs *recognized favorable economic or social circumstances* to start their businesses such as: "There is a trend in the world towards people wanting to be happy in their work, searching not only for a salary, but also for a purpose that satisfies their expectations at that moment of their lives" (E111), and "The tendency towards conscious consumption by renting instead of buying that appeared at the time with Netflix, Spotify, and Airbnb" (E151).

The conclusions of the research reports from the Global Entrepreneurship Monitor and World Economic Forum (Macedo et al., 2013; Drexler & Herrington, 2015; Schwab, 2016) corroborate our findings that government, particularly its complicated and costly labor and tax laws, negatively influences entrepreneurship in Brazil. These reports also stress that the size of the Brazilian market generates favorable economic and social circumstances for entrepreneurship. On the other hand, the finding that entrepreneurs face social and cultural barriers contradicts the conclusions of the reports that there are no such barriers in Brazil. A possible explanation for this contradiction is that, for innovative start-ups, the issues the reports considered to be normal were seen as barriers by the study entrepreneurs. The exception is the social barrier as already mentioned by E171: "…my middle-class acquaintances mocked me because I was doing work that they considered humiliating." This type of social barrier only exists in countries with high social inequality like Brazil, which has a GINI index of 48.4% (World Bank GINI Index, 2016) and a PDI of 69 (Hofstede, 2010).

Entrepreneurial framework conditions

Four entrepreneurs said that they encountered a favorable entrepreneurial environment in Brazil and four said that they had *no support from the entrepreneurial environment*; some said: "In the last years, entrepreneurship has become fashionable in Brazil, and today it is much easier to start a business than it was some years ago when people did not know what entrepreneurship was" (E111), and "At the beginning, the entrepreneurial environment in Brazil was of no help" (E161). Three entrepreneurs who considered that they encountered a favorable entrepreneurial environment in Brazil said that they received important *support from entrepreneurs* to start their businesses, and a reason given was: "We (I and my partner) participated in many events on E-Commerce and entrepreneurship. In these events, we tried to contact people, especially entrepreneurs. To these people, we exposed our business ideas to hear criticism and get advice. With these contacts, we built a network of informal mentors that was a great help in the development of our business" (E151).

As noted, half of the entrepreneurs said Brazil to have a favorable entrepreneurial environment while half said it does not. These findings may indicate a possible trend toward a more favorable entrepreneurial environment based on support from other entrepreneurs (mentioned by three entrepreneurs). As demonstrated by the research on the national framework conditions of the study and the global entrepreneurship index (GEI) developed by Ács, Szerb, and Autio (2016), this possible trend does not mean that it is becoming easier to start a business in Brazil. The GEI highlights the weaknesses of the entrepreneurial environment in Brazil compared with the average of the 132 countries surveyed, especially when compared to other Latin American and Caribbean countries.

Findings Related to RQ3: Why and how did Brazilian environmental conditions create high-growth entrepreneurial opportunities?

Analyzing the results of the thematic coding of the interview transcripts, we found how Brazilian environmental conditions created the high-growth entrepreneurial opportunities -- opportunity recognition, discovery, or creation (Sarasvathy, Dew, Velamuri, & Venkataraman, 2010) -- and drove the innovations they developed -- user, manufacturer, or supplier (von Hippel, 1988).

Opportunity recognition, discovery, or creation

Three entrepreneurs explained that they made an *opportunity discovery*, and one of the explanations given was: "The curiosity of trying to understand the difficulties of the area in the firms made me recognize that there was an opportunity to offer a service to solve these problems" (E111) Three mentioned that they made an *opportunity recognition*: "The opportunity appeared because the multinational decided to close the factory in Brazil, discontinue the supply of customized products from the factory, and concentrate on supplying standardized imported products with more technology" (E121). Only one entrepreneur made *an opportunity creation*, as previously noted: "Because I had worked selling products to the C class in Brazil, I saw the opportunity of selling a similar product to this class with better performance and at a slightly higher cost than those that were being offered to them in the market by the large companies" (E181).

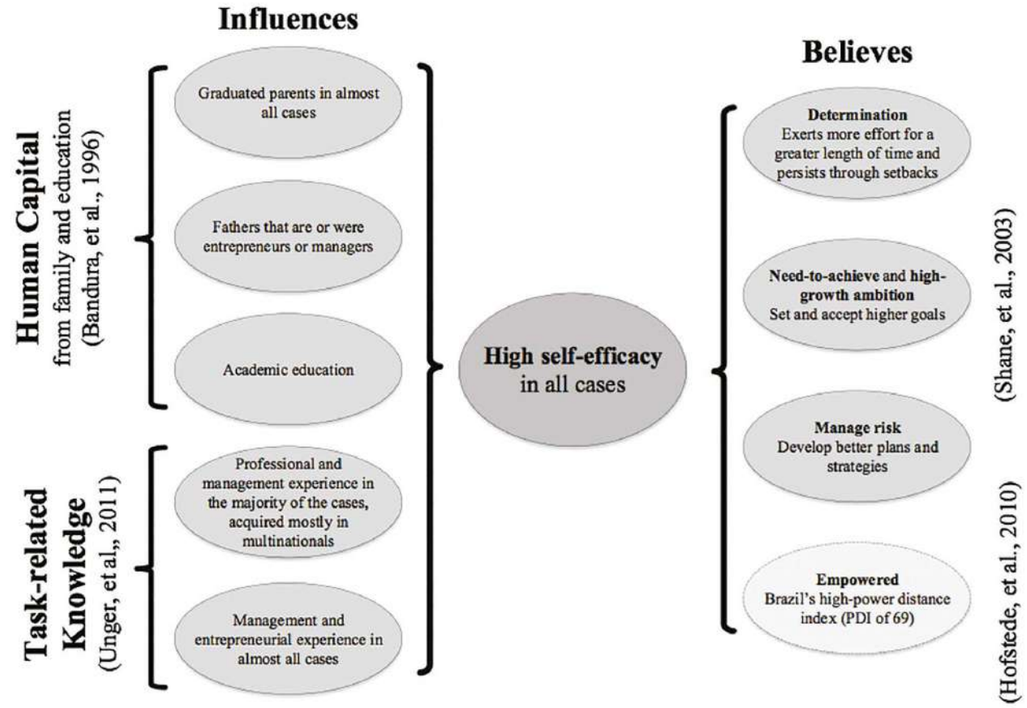
These explanations led to the additional finding that all eight entrepreneurs made opportunity discoveries, recognitions, or creations based on their professional experience. The conclusion that they all considered as very important for success knowledge of markets, knowledge of customer problems, or knowledge of ways to serve (Shane, 2000), acquired during their professional experience, corroborated this finding. Additionally, those entrepreneurs who recognized opportunities identified unmet local needs, and the entrepreneur who discovered opportunities filled supply gaps in the local market (Sarasvathy, Dew, Velamuri, & Venkataraman, 2010).

User-, manufacturer-, or supplier-driven innovation

Four entrepreneurs made a *manufacturer-driven innovation*, for example: "The innovation is in the quality of the product, how it is processed, and in the distribution logistics" (E171). Three entrepreneurs made a *user-driven innovation*: "Curiosity and knowledge of the area we were working made us aware of a problem in the area and able to develop a digital product to solve this problem" (E141). One entrepreneur made a *supplier-driven innovation*, and the explanation given was: "From the beginning I knew that that the opportunity was an innovation because nobody had sold products that required technical advice over the internet before" (E131).

As with opportunity discovery, recognition, and creation, the explanation of the innovation leads to the same additional finding that the entrepreneur's professional experience was the basis for all innovations. Another finding from the explanations is that all the innovations are for the Brazilian market only, filling local needs or market gaps. None of the innovations were disruptive innovations with the potential to shift the wealth creation curve at the industry and at the individual level.

Figure 3. How the entrepreneurs acquired their self-efficacy



Conclusions from the Findings

We considered self-efficacy in the cognitive/personality traits of the entrepreneur to be very important for the success of all eight entrepreneurs. Drnovšek, Wincent, and Cardon (2010) corroborate this importance. The authors explain that self-efficacy is important to understand entrepreneurial success and that a substantial body of evidence supports its influence on the success of start-ups and business growth. Shane, Locke, and Collins (2003) posit that individuals with high self-efficacy will exert more effort for a greater length of time on a given task; persist through setbacks; set and accept higher goals; and develop better plans and strategies for the task. This explanation by Shane, Locke, and Collins (2003) suggests that the other factors in the cognitive/personality traits that most entrepreneurs considered to be very important for their success -- determination, the need to achieve, high-growth ambition, and the ability to manage risk -- are directly included in their high self-efficacy (Rauch & Frese, 2007). The significant hurdles entrepreneurs had to overcome to develop their businesses in Brazil -- complicated and costly labor and tax laws, social and cultural barriers, no government support, and no start-up financing -- illustrate the importance of high self-efficacy for their success. The unavailability of start-up financing was also a significant hurdle for entrepreneurs in Brazil because it obliged them to increase their personal savings to finance their businesses (Table 2). This could also be a reason why the average amount of work experience of the eight entrepreneurs before they started their businesses was slightly over 11 years. Of the eight entrepreneurs, only three got additional financing from their families to finance the start-up of their businesses.

From the entrepreneurs' statements, demographic data, and experiences (Tables 1 and 2), it is possible to infer that they acquired their high self-efficacy (Figure 3) over time mostly through the influence of university-educated parents, fathers who are or were entrepreneurs or managers, academic education, and professional, management, and entrepreneurial experience (Bandura, 1977, 1993, 1997; Boyd & Vozikis, 1994; Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). These influences contributing to the high self-efficacy of the entrepreneurs are available only to a very small, better-educated, and empowered elite group in Brazil. Four entrepreneurs belong to the 0.4% of the Brazilian population that had two parents graduated in the early and mid-1990s; three belong to the 4.7% of whom one parent graduated; and one had parents with only a secondary education (Guedes, 2008). All of them belong to the 11.3% that had the privilege of an academic education at the end of the 1990s or early 2000s (Censo, 2010) and to the 45.5% of whites that earn on average twice as much as the 53.6% of mixed race and blacks (Censo, 2010; Ipea, 2012; IBGE, 2015a, 2015b, 2015c; Slavery's legacies, 2016). Therefore, they belong to the country's very small, well-educated, and empowered elite, which is a direct consequence of the high inequality in Brazil with a GINI index of 48.4% (World Bank GINI Index, 2016) and a PDI of 69 (Hofstede, 2010).

The conclusion that the high-growth entrepreneurs belong to the country's very small, well-educated, and empowered elite in Brazil explains their high self-efficacy and high-growth ambition and leads, by inductive reasoning, to the additional conclusion that high-growth entrepreneurs with high self-efficacy and high-growth ambition are rare in Brazil. They are rare because most of the country's entrepreneurs who do not belong to the very small, well-educated, and empowered elite do not acquire the same self-efficacy and high-growth ambition necessary to become high-growth entrepreneurs. This conclusion explains why the research conducted by the Global Entrepreneurship Monitor (Macedo et al., 2013) found that only 5.1% of early-stage entrepreneurs in Brazil are ambitious (i.e., expect to employ more than 10 employees and have 50% more employees in 5 years). The research conducted by the World Economic Forum and the Global Entrepreneurship Monitor (Drexler & Herrington, 2015) corroborated the very low ambition of early-stage entrepreneurs in Brazil, finding that only 4% of early-stage entrepreneurs are ambitious (i.e., expect to have at least 20 employees in 5 years).

From the conclusion that high-growth entrepreneurs belong to the country's very small, well-educated, and empowered elite, we can also conclude that they had a differentiated initial human capital that gave them privileged access to the employment market where they enhanced their initial human capital by acquiring management and, in some cases, entrepreneurial experience, task-related knowledge of markets, understanding of customer problems, or other ways to serve. These skills were directly responsible for their success in discovering, recognizing, or creating entrepreneurial opportunities and successfully developing them into high-growth businesses (Becker, 1993). The following statement from E181 supports how important the task-related knowledge acquired through professional experience is for the success of high-growth entrepreneurs: "Because I had worked selling products to the C class in Brazil, I saw the opportunity of selling a similar product to this class with better performance and at a slightly higher cost than those that were being offered to them in the market by the large companies."

The findings of Cooper, Gimeno-Gascon, and Woo (1994) and Unger, Frese, and Rosenbusch (2011) corroborate the conclusion that the task-related knowledge in the human capital of the high-growth entrepreneurs contributes to their success. Cooper et al. (1994) found that the human capital of high-growth entrepreneurs with specific industry knowledge contributed to success in terms of both the survival and the growth of their businesses. Unger, Rauch, Frese, and Rosenbusch (2011) found that the human capital-success relationship was higher for the human capital directly related to entrepreneurial tasks than for the human capital with low task-relatedness.

From the findings on the social capital of the study entrepreneurs, it is possible to conclude that social capital was very important for the development of their businesses. Most had support from their professional networks based on their professional reputation and from family, particularly from fathers who were or had been entrepreneurs or managers. Entrepreneur 161 best illustrates professional network support based on professional reputation, and the statement: "What gave us some breathing space and tranquility to organize and develop our business was a service contract that I was able to get from my former employer because they liked and trusted my work" (E161). As previously mentioned, Entrepreneur E121 emphasizes family support and especially, in this case, from a father who had been an entrepreneur: "I followed the model recommended by my father: work for a multinational, learn the business, and when prepared, start your own business." It is also interesting that half of the entrepreneurs in the study had support from their social networks, as E131 said: "I had an important friend and mentor during the initial development of my business who helped me solve administrative problems."

The findings of Baron and Markman (2000), Hisrich and Peters (2002), Aldrich and Cliff (2003), Carr and Sequeira (2007), and Baron (2012) corroborate the conclusion that the social capital of entrepreneurs, particularly the support from professional networks and family, is important for success. Baron and Markman (2000) posit that a high level of social capital that is built on a favorable reputation, relevant previous experience, and direct personal contacts often assists entrepreneurs in gaining access to venture capitalists, potential customers, and other potential supporters. Aldrich and Cliff (2003) and Carr and Sequeira (2007) explain that families influence entrepreneurs in opportunity recognition, start-up decisions, and resource mobilization. Hisrich and Peters (2002, p. 69) highlight that having a father who is self-employed provides a strong inspiration for entrepreneurs. Baron (2012) points out that entrepreneurs obtain a wide range of benefits from their social capital, including support, advice, encouragement, acquisition of tangible financial resources, cooperation and trust from others, and enhanced access to information.

Note that the conclusion that the high-growth entrepreneurs belong to the very small, well-educated, empowered Brazilian elite also has an influence on their social capital. The statement "My social network that I developed in the good school and universities I attended, always helped with contacts to do business" (E161) illustrates this influence. On the other hand, the empowered elite discriminates against those they consider to be below their social class (Hofstede, Hofstede, & Minkov, 2010). Two entrepreneurs who started their businesses modestly doing what was considered low-paid work, described this discrimination, for example: "My social network did not support me; on the contrary, they mocked me because I was selling my product directly door to door. For them, my work was humiliating and was below their social level" (E171).

From the findings on the influence of Brazilian environmental conditions on the cognitive framework of the study entrepreneurs and on the creation of high-growth entrepreneurial opportunities, it is possible to conclude that the country offers favorable economic or social circumstances to start a high-growth business. However, it requires the entrepreneur to have a task-related knowledge acquired from professional experience, have a high self-efficacy to overcome significant hurdles without support, and be alert to and conduct a systematic search for opportunities. The brighter side is that the environment is becoming more favorable for entrepreneurship, and it is possible to get support from other entrepreneurs to start a business.

Additionally, it is possible to conclude that all the entrepreneurs based their innovations on the task-related knowledge gained through their professional experience (mostly acquired in multinationals), and the innovations only took place in the Brazilian market, filling a local need or a market gap. None of the innovations came from private or government-sponsored research or were spinoffs from universities. Additionally, none of the innovations were disruptive innovations with the potential to shift the wealth creation curve at industry and individual levels (Ács, 2010). Consequently, none of the eight high-growth entrepreneurs in this study belong to the sub-group of high-impact entrepreneurs that Ács, Parsons, and Tracy (2008) and Ács (2008) described as entrepreneurs who develop firms that impact the economy of a country through innovation, productivity growth, or employment change.

Contribution to Theory, Policymakers, and Universities

The contribution to the theory, and which the literature corroborates, is that the key factors in the cognitive framework of entrepreneurs explain their success in developing high-growth businesses in Brazil. These factors are high self-efficacy in cognition/personality traits (Shane, Locke, & Collins, 2003; Drnovšek, Wincent, & Cardon, 2010; Cardon & Kirk, 2015); human capital acquired from family and education, complemented by task-related knowledge from professional experience (Cooper, Gimeno-Gascon, & Woo, 1994; Unger, Rauch, Frese, & Rosenbusch, 2011); and social capital that provided support from professional networks based on professional reputation and from families (Baron & Markman, 2000; Hisrich & Peters, 2002; Aldrich & Cliff, 2003; Carr & Sequeira, 2007; Baron, 2012). An additional conclusion that contributes to theory is that these key factors, especially high self-efficacy that leads to high-growth ambition, are rare in Brazil because the high-growth entrepreneurs belong to the country's very small, well-educated, and empowered elite (Bandura, 1977, 1993; Boyd & Vozikis, 1994; Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). This conclusion leads, by inductive reasoning, to the additional conclusion that high-growth entrepreneurs are rare in Brazil because most of the country's entrepreneurs who do not belong to the very small, well-educated, and empowered elite do not acquire the high self-efficacy in their cognitive framework to develop the high-growth ambition needed to become high-growth entrepreneurs. This additional conclusion explains the findings that early-stage entrepreneurs in Brazil have almost no high-growth ambition (Macedo et al., 2013; Drexler & Herrington, 2015).

A contribution to government policymakers and universities engaged in promoting entrepreneurship is the knowledge that (a) the task-related knowledge of the entrepreneurs in the study -- acquired mostly in multinationals -- guided them to discover, recognize, or create high-growth entrepreneurial opportunities, (b) their average amount of professional experience was 11 years, and (c) their average age was 31 when they started their successful ventures. This leads us to infer that a fundamental factor for their success was their extensive professional experience and not knowledge acquired through education. A corollary to this conclusion is that, due to the low quality of the Brazilian education system (Schwab, 2015, 2016), early-stage entrepreneurs needed to acquire additional task-related knowledge through extensive professional experience to find high-growth entrepreneurial opportunities. In the case of Brazil, this conclusion questions the myth created by the student entrepreneurs Steve Jobs, Michael Dell, Bill Gates, and Mark Zuckerberg. It implies that the best recommendation for aspiring entrepreneurs in Brazil is the one E121 received from his father: "I followed the model recommended by my father: work for a multinational, learn the business, and when prepared, start your own business."

The conclusions from this study lead to three recommendations for policy makers and universities: (a) a drastic improvement should take place in the Brazilian education system and in research at the university level to develop knowledge that can spill over to entrepreneurs and create breakthrough innovations (Audretsch, 1995; Audretsch & Keilbach, 2007; Audretsch, Keilbach, & Lehmann, 2006); (b) create incentives, financial support, entrepreneurship courses, and mentoring for mid-career professionals (e.g., the case of the majority of high-growth entrepreneurs) to help them start businesses based on task-related knowledge acquired in their professional careers to fill market gaps or unfulfilled needs and thus promote economic development; and (c) simplify labor and tax laws to make it easier for entrepreneurs to grow their businesses.

> **"...high-growth entrepreneurs belong to the country's very small, well-educated, and empowered elite..."**

Suggestions for Future Research

From conclusions that high-growth entrepreneurs are rare in Brazil because they all belong to the very small, well-educated, and empowered elite, had substantial professional experience (an average of 11 years), and started their high-growth ventures after acquiring professional experience (the average start-up age was 31), it is possible to deduce by inductive reasoning the following corollaries that need more research to be validated: (1) entrepreneurs who do not belong to the well-educated and empowered elite will most likely not become high-growth entrepreneurs in Brazil; (2) task-related knowledge, acquired mostly in multinationals, guided entrepreneurs to discover, recognize, or create high-growth entrepreneurial opportunities; (3) due to the low quality of the Brazilian education system (Schwartzman, 2012), entrepreneurs with university degrees needed to acquire task-related knowledge through extensive professional experience to recognize high-growth entrepreneurial opportunities; and (4) task-related knowledge, acquired through professional experience mostly in multinationals, can lead to innovations that fill local unmet needs and market gaps but not necessarily to breakthrough innovations that can significantly move the wealth creation curve of Brazil at the industry or the individual level.

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CSR Strategies in Sub-Saharan Africa: Focusing on the Bottom of the Pyramid

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Abstract

In sub-Saharan Africa, the number of foreign-owned extractive industries in natural-resource-rich countries continues to increase. As these multinational corporations (MNCs) expand, there is increasing pressure from Western governments and NGOs for these corporations to give back to "resource-cursed" communities through Corporate Social Responsibility (CSR) initiatives. This paper explores the current challenges of CSR in sub-Saharan Africa through the lens of Carroll's Pyramid of Social Responsibility, which reflects on a corporation's pursuit of economic, legal, ethical, and philanthropic responsibilities. With a focus on CSR initiatives that have the most economic benefit to both the MNC and the country in which it operates, this paper suggests that, in sub-Saharan Africa, the most challenging aspects of the pyramid are the legal and ethical contexts, as MNCs are often operating in countries with autocratic regimes and differing perceptions on the rule of law. Three US-based gas and oil exploration and production companies are compared through case studies to demonstrate how a focus on the legal and ethical contexts can potentially result in a more stable and financially successful corporation. Based on the challenges of having effective CSR initiatives in sub-Saharan countries, this paper will conclude with a recommendation that the most economically effective form of CSR may, in fact, be requiring more accountability on the part of MNCs and focusing on these companies upholding the legal and ethical contexts of Carroll's pyramid to retain capital in the resource-cursed countries of sub-Saharan Africa.

Keywords: Corporate Social Responsibility, extractive industries, sub-Saharan Africa, offshore corporate social responsibility, multinational corporations.

CSR Strategies in Sub-Saharan Africa: Focusing on the Bottom of the Pyramid

Corporate Social Responsibility (CSR) has meant everything from "a person's obligations to consider the effects of his decisions and actions on the whole system" (Carroll, 1999, p. 272) to "good neighborliness" (Carroll, 1999, p. 278), to a concept that embodies the "economic, legal, ethical, and discretionary categories of business performance" (Carroll, 1979, p. 499), to "corporate social or environmental behavior that goes beyond the legal or regulatory requirements of the relevant market(s) and/or economy(s)" (Kitzmueller & Shimshack, 2012, p. 53). It is broadly used as an umbrella term that means something – but not always the same thing – to everybody and encompasses the complex relationships between business and the society in which it operates (Jamali, Lund-Thomsen, & Jeppesen, 2017). Despite its many iterations, CSR is fundamentally balancing the need for profitability with societal concerns (Freeman & Gilbert, 1987) and "manifests itself in some observable and measurable behavior or output" (Kitzmueller & Shimshack, 2012, p. 53).

The concept of CSR and what it means for companies is embedded in a larger argument over what exactly the role of a corporation is in society. On one end of the spectrum, Milton Friedman proclaimed that "the social responsibility of business is to increase its profits" (1970, p. 32). Others take a more middle-of-the-road approach and believe that the responsibility of business may include something other than the traditional value system, which is focused on profit, economic growth, efficiency, and financial performance (Frederick, 1987), implying that business can do more to be socially responsible. Finally, at the other end of the spectrum, there are those who believe that business may have a responsibility to society that is beyond profit-seeking and maximizing its own financial well-being (Carroll & Shabana, 2010; Porter & Kramer, 2011).

A company's response to societal concerns, however, is complicated by the fact that its primary focus is typically on growing its products while adapting to a constantly-changing economic and competitive environment (Ackerman, 1973). In fact, integrating societal demands into a company's operations may reduce its ability to produce goods or services, which can ultimately make it less profitable (Tran, 2015). This fundamental tension between focusing on profit and integrating CSR has been increased by the rise of consumer activism in the Western world and the fact that consumers are now looking for corporations to act responsibly and benefit the community and environment (Utting, 2005).

However, does – and should – CSR play a similar role in sub-Saharan Africa? An analysis of CSR in different geographic regions indicates that countries have different motivations for implementing CSR (Hou & Li, 2014). While CSR in the United States has been increasingly presented as part of a company's core values and tied to the pursuit of the triple bottom line of profit, planet, people (Morrison, 2012), European companies are most likely to pursue CSR strategies if they are under scrutiny by stakeholders (Cedillo Torres, Garcia-French, Hordijk, Nguyen, & Olup, 2012; Forte, 2013). Unfortunately, studies examining CSR in institutionally constrained environments such as sub-Saharan Africa continue to be rare (Julian & Ofori-Dankwa, 2013).

In sub-Saharan Africa, companies operating in the extractive industries of mineral and petroleum extraction are booming (Campbell, 2012). This is due largely to the fact that sub-Saharan Africa is home to twenty of the most resource-rich nations in the world. However, many countries in sub-Saharan Africa face the resource curse or paradox of plenty in which these countries consistently fail to turn their wealth in natural resources into an increase in even a basic standard of living for its citizens (Nwagbara, 2016), specifically if the quality of their institutions is poor (van der Ploeg, 2011).

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Moreover, the concept of a resource curse implies that citizens are ultimately harmed through the extraction of natural resources (Keblusek, 2010). While this industry is making a select few very wealthy, it has not resulted in economic development for most of its citizens (Ackah-Baidoo, 2012). The industry itself is constructed of foreign multinational corporations (MNCs) which set up enclave-type camps, largely isolated from the community in which they are working (Hilson, 2012). Oil and minerals, resources that are more prone to enclave type extraction, encourage rent seeking (Sala-i-Martin & Subramanian, 2003) and increase civil conflict (van der Ploeg, 2011), preventing development. However, the quality of institutions plays a role in how detrimental rent seeking is. With good institutions, rent seeking and production are complementary activities, allowing countries to avoid the resource curse (Mehlum, Moene, &Torvik, 2006a; 2006b).

At the same time, there is an increased focus on good governance of these multinationals, including the Extractive Industries Transparencies Initiative, which has been implemented to some degree in twenty countries in Africa (Moberg, 2010). Does this mean, however, that MNCs operating in sub-Saharan Africa are obligated to "do good" through CSR initiatives simply to satisfy external stakeholders? This paper will analyze the challenges that firms operating in sub-Saharan Africa face in developing and implementing CSR through the framework of Carroll's Pyramid of Social Responsibility. In conclusion, this paper will present a recommendation that addresses the economic interests of the developing country and the MNC and focuses on pursuing the Economic and Legal Responsibilities almost exclusively before moving to stakeholder-driven CSR strategies.

Literature Review

Carroll's Four Contexts

Carroll's concept of corporate social responsibility was established in the 1960s and remains the most widely cited in literature (Visser, 2006). The presentation of CSR as a multi-layered concept consisted of four interrelated concepts consisting of economic, legal, ethical, and philanthropic issues (Cedillo Torres et al., 2012). This basic overview is illustrated in Figure 1.

Figure 1. Carroll's CSR pyramid. Reprinted from "The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organizational Stakeholders," by A. B. Carroll, 1991, Business Horizons, 34(4), 39-48.

First, the economic context refers to a business's primary responsibility of producing goods and services that society wants, and selling them at a profit. Second, the legal context presumes that the business is operating under the laws and regulations that apply to its industry. Third, the ethical context, admittedly a gray area, refers to how businesses behave according to societal norms, which often go above and beyond the legal and regulatory requirements. Finally, the fourth context, philanthropic or discretionary, relates to a company's voluntary roles and activities in society (Carroll, 1979). Both for-profit corporations and social enterprises fulfill each of these contexts to differing degrees, and it can be helpful to think of each of these contexts as a continuum, whereby each entity can be graded on a "do nothing" to a "do much scale of implementation (Mbonda, 2016).

Carroll's pyramid is far from a perfect metaphor for CSR in sub-Saharan Africa. For proponents of philanthropy, the very concept of a pyramid indicates that the foundation of economic responsibility is the most important, while philanthropy can be considered a "hoped for" activity that, if not accomplished, is neither unethical nor illegal (Mbonda, 2016). Furthermore, Carroll's model suggests that ability for a MNC to implement philanthropy depends on its economic, legal, and ethical successes (Amoaka, 2016).

Economic

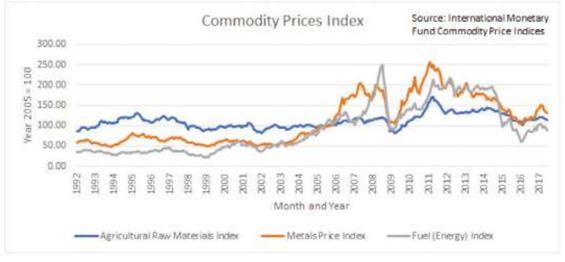
It should come as no surprise that a business's focus on economic success forms the foundation of Carroll's pyramid. After all, if a business cannot produce a product or service that is needed by society

and make a profit, it will eventually cease to operate. In addition, current measures of a firm's value and success are based almost solely on financial performance (Harrison, 2011). Everything from the stock market to annual reports measures a corporation's financial performance, which is one reason why firms typically make maximizing shareholder value a key priority.

Additionally, the theoretical grounding of CSR antecedent research, which focuses on why a company would initiate a CSR strategy, is grounded in slack resource theory (Julian & Ofori-Dankwa, 2013). Slack resource theory suggests that when financial resources are in abundance, firms can engage in discretionary activities such as CSR (Salzmann, Ionescu-Somers, & Steger, 2005). However, firms operating in sub-Saharan Africa face difficulties that those operating in developed nations do not. These include difficulty accessing investment funding and working capital, accessing an operational stock market, or even accessing bank loans. As a result, even if MNCs operating in sub-Saharan Africa are reaping profits, they often develop a culture of hoarding capital to assure their financial success due to few external options (Julian & Ofori-Dankwa, 2013). It is also important to note that while the industry is dominated by a few large-cap firms like Exxon Mobil, those operating exclusively in sub-Saharan Africa such as Erin Energy and VAALCO Energy, Inc. that have very small market caps ($689 million and $90 million respectively) and may be more directly impacted by slack resource theory.

Companies that rely on extraction of natural resources also face highly volatile commodity prices, especially over the last twenty years (see Figure 2). This can lead to profit uncertainty as commodity prices swing. For example, Glencore, BHP Billiton, and Rio Tinto, the world's three largest extractive industry companies by revenue, experienced a 68%, 86%, and 85% drop in profit, respectively, in 2015, because of falling commodity prices. In 2015, Rio Tinto lost $866 million, while in 2016, BHP Billiton sustained a $6.39 billion loss due to the ongoing fall in commodity prices. As evidenced in Figure 3, firms whose profits track closely to commodity prices may need to focus more on their underlying core business than CSR initiatives.

Figure 2. Historic tracking of commodities. Fuel index tracks price of crude oil, natural gas, and coal. Reprinted from "IMF Primary Commodity Prices," by International Monetary Fund, 2018, March 30, Retrieved from http://www.imf.org/external/np/res/commod/index.aspx.



In sub-Saharan Africa, there may be fewer external pressures for a company to implement a CSR strategy. For example, in the West, there is growing pressure and even requirements for reporting from governments that are forcing MNCs to become more sustainable and pursue CSR strategies that benefit the communities in which they operate (Geen, 2012). However, in sub-Saharan Africa, states "show little vigilance concerning the implementations of CSR," which means that it is up to civil society (Mbonda, 2016, p. 175) and consumers in developed countries (Kitzmueller & Shimshack, 2012) to pressure MNCs to pursue CSR initiatives (Mbonda, 2016, p. 175.). While civil society in Western countries may include outraged citizens that influence CSR initiatives, in sub-Saharan Africa and other developing economies, civil society is largely comprised of NGOs and advocacy groups (Hofman, Moon, & Wu, 2017).

Figure 3. Profit or loss of Glencore, BHP Billiton, and Rio Tinto since 2010. Author calculation from financial statements of each corporation.

Legal

The legal aspect of Carroll's pyramid implies that a business should operate under legal restrictions and governmental guidelines in the countries in which they operate (Visser, 2006). This is perhaps easier said than done in sub-Saharan Africa, where countries dominate the top third of most corrupt countries according to Transparency International's Corruption Perceptions Index (2017). The World Bank (2007) estimates that of the $20 to $40 billion of assets hidden by corrupt leaders in developing countries, most of it is from corruption in Africa; the International Monetary Fund (IMF) (2016) reports that corruption in sub-Saharan Africa has caused "recent integrity failures" (p. 7).

Additionally, governments in sub-Saharan African often have few resources – physical, financial or human – to enforce any regulations that they may have (Mzembe, Downs, & Meaton, 2016). MNCs themselves often fail to undertake political or corruption risk assessments (Stapenhurst, Karakas, Sarigöllü, Jo, & Draman, 2017). Julian and Ofori-Dankwa (2013) highlight that specifically in West Africa, there are limited laws that dictate a business's social investment, and what few regulations that do exist are weakly enforced. In addition, there are few norms or expectations that relate to a business's social investment in West Africa. At the same time, MNCs are quick to address what they view as dysfunctional administrative and political systems within the countries in which they operate, and there is a general belief that these "governance gaps" need to be fixed before MNCs can effectively contribute to local development and poverty alleviation (Campbell, 2012).

Ethical

The lack of government regulations and the infrastructure to support them suggests that the legal context of Carroll's pyramid quickly blurs into the ethical context. If there is no repercussion for MNCs to follow a country's laws, what are the ethical pressures for them to comply? In response to this question, Ferguson (2006) and others have drawn a direct correlation between countries with the weakest or most corrupt states and those that attract significant inflows of capital from mining companies. This is exacerbated by the fact that many MNCs simply negotiate directly with an autocratic regime to gain access to oil or other resources, and these deals lack any sort of accountability (Ackah-Baidoo, 2012). A recent report released by the African Union's panel on illicit financial flows and the United Nations Economic Commission for Africa (UNECA) indicates that Africa loses over $50 billion each year due to illicit financial flows, the majority of this being through the extractive industry (United Nations, 2015). Ackah-Baidoo (2012) and Hilson (2012) have pointed to leaders in countries such as Cameroon, Equatorial Guinea, and Gabon who have personally benefited and have even been able to stay in power (Ross, 2001) because of the extractive MNCs working in their countries. However, is this lack of accountability an ethical breach on the part of the MNC or on the part of the government? Cash (2012) suggests that there is a difference between CSR and corporate accountability and that it is not the role of the MNC to enforce accountability. However, Ackah-Baidoo (2012) suggests that the larger issue is that MNCs are overstating their role in both providing accountability as well as reducing poverty in the countries in which they operate. This sort of "greenwashing" seeks to legitimize the power of MNCs (Banerjee, 2008; Mueller-Hirth, 2016) and may be particularly true of the extractive industries that are ultimately profiting from natural resources that are mined in such a way that causes environmental challenges.

Larger ethical issues can include the extent to which a corporation can pollute the environment as well as the use of child labor and labor practices that are unethical and harmful from a Western viewpoint. These ethical issues relate to CSR because they can alter the public's perception of a corporation. Unlike Apple or other MNCs that sell brand-name products to consumers across the globe, MNCs operating in the extractive industry rarely generate the same level of awareness from the Western world, and they often operate in countries where local citizens have a limited to non-existent voice within an autocratic regime (Sayne, Gillies, & Watkins, 2017). When Apple faces substantiated allegations that its Chinese subcontractors utilized employment practices that are considered inhumane by Western standards, its brand image was tarnished (Karlgaard, 2012). The same is simply not true for Royal Dutch Shell, Eni S.p.A., Statoil ASA, and other powerful companies that are not consumer-facing and have little name recognition outside of the extractive industry.

In response to growing concern over ethical issues and alleged abuses by the extractive industry, in 2002, Western governments and NGOs developed the Extractive Industries Transparency Initiative (EITI), which the World Bank endorsed and funded, to bring accountability to MNCs pursuing contracts through Africa (Hilson & Maconachie, 2008). The primary goal of EITI is to focus on accountability and therefore work to reduce corruption, as defined by Klitgaard's (1988) equation:

(C)orruption = (M)oney + (D)iscretion – (A)ccountability

EITI is voluntary, and, while some countries such as Nigeria have legislated that MNCs follow EITI's reporting, only 20 African countries are implementing EITI at any level. Research investigating the link between EITI compliance and the level of corruption in the country is less than promising. Research by Keblusek (2010) on the effects of Nigeria's implementation of EITI indicates that there have been some positive, albeit marginal, improvements in the reduction of corruption by MNCs operating in Nigeria. While Berkowitz, Bucheli, and Dumez (2017) cite the importance of EITI and other meta-organizations as a way to establish clear reporting rules and procedure, Corrigan (2014) finds that EITI has little effect on the amount of corruption in a country. Kolstad and Wiig (2009) and Sovacool and Andrews (2015) argue that transparency alone will do little to reduce corruption.

The success of EITI in reducing corruption often centers around how successful the different stakeholders are in sharing a common vision and the interplay between the voluntary nature of EITI and possible mandatory regulations. On the negative side, Aaronson (2011) and Smith, Shepherd, and Dorward (2012) lament that the EITI partnership between governments, businesses, and civil society (e.g., NGOs) is less effective than it could be because governments often limit civil society involvement and the different stakeholders hold different visions about EITI implementation. On the positive side, Alstine (2014) reports that civil society participants in Ghana have successfully lobbied the government to take some of the voluntary EITI practices and turn them into mandatory and binding regulation. This change has increased transparency. The question is whether the success in Ghana is unique to Ghana or is scalable to other countries. However, given the limited amount of time the EITI has operated in many countries, there is little empirical evidence of its effectiveness (Acosta 2013).

Discretionary/Philanthropic

Traditional for-profit corporations face a fundamental tension between maximizing profit and demonstrating social responsibility. This has resulted in unique CSR initiatives that often do not relate directly to a corporation's stated mission. In 1984, Freeman expressed concern over the concept of CSR being simply an "add on" to "business as usual" or that "corporate social responsibility is fine, if you can afford it" (40). Throughout the United States and Europe, many CSR initiatives are add-ons to corporate activity and are operationalized as public relations and media, general philanthropic initiatives, or volunteerism (Waddock, Bodwell, & Graves, 2002; Porter & Kramer, 2006). These "add-on" activities appear to be spreading from the West to sub-Saharan Africa.

Perhaps in response to the EITI, there has been an increase over the past two decades of extractive industries operating in sub-Saharan African investing in CSR activities such as providing funding for roads, health clinics, and wells that provide clean water (Ackah-Baidoo, 2012). As there is more of a push from civil society and Western operators for transparency, MNCs are increasingly seeking to invest in CSR to improve their international reputations (Cash, 2012). While this may be perceived as a win for local communities, Ackah-Baidoo (2012) believes that MNCs – particularly those operating in secured enclaves that are isolated from local communities – simply do not understand the real needs of indigenous populations. This implies that the CSR initiative is more about preserving corporate reputation than about intentionally investing in a local community.

To be fair, MNCs operating in the extractive industries in sub-Saharan Africa face a "damned if you do, damned if you don't" dilemma when incorporating CSR or broader philanthropic strategies. Some researchers (Ackah-Baidoo, 2012) argue that it is the role of the MNC to lead initiatives that will help develop a sustainable society. In large part, this is because funds that are provided to corrupt governments does not generate significant improvement (ibid.). This concept is also supported by the Johannesburg Declaration on Sustainable Development, which suggests that the private sector needs to "contribute to the evolution of equitable and sustainable communities and society" (United Nations, 2010, p. 124). However, researchers such as Campbell (2012) and Cash (2012) suggest that MNCs should not – in fact, cannot – become private operators for functions that should be owned by the state. Instead, these researchers suggest that the only way to achieve sustainability is to have MNCs invest revenues into agriculture and manufacturing that is part of a government-developed and supported broad economic development plan (Cash, 2012). Recent research by Maas and Boons (2017) suggests that all CSR strategies should be sustainable, and sustainability can only be achieved if the CSR is integrated within the firm's strategy and the results of CSR are measured and monitored.

Discussion

Limitations of CSR

Within the added complexity of sub-Saharan Africa, CSR faces some specific challenges. First, who leads a CSR initiative? Should an MNC attempt to work within the existing government infrastructures even if they may be corrupt? Or should an MNC implement CSR that it believes is in the best interest of the community, essentially functioning as the state? If the latter is the case, then how does the MNC know what needs the community demands and, moreover, what needs can

be sustainably supported (Campbell, 2012)? Genasci and Pray (2008) argue that CSR could be detrimental to long-term development if it does not help the government become more effective. Second, as EITI and other initiatives focused on the transparency of MNCs working in developing nations gain prominence, there may be a knee-jerk reaction of MNCs to develop CSR programs – any CSR program – simply to look like a good corporate citizen. This reactionary CSR is usually detrimental to both the MNC and the community because the CSR initiative is driven by a public relation need and is likely not a core part of the corporation's mission (Egan, 2011). Moreover, Visser (2006) suggests that the West still dominates CSR agendas and pushes MNCs, often through the guise of increased transparency, to complete CSR activities that Western countries view as being beneficial to African countries.

While there is a "business case" to be made for investing in CSR as a way to help companies develop or defend their reputations, gain a competitive advantage, or otherwise create value (Carroll & Shabana, 2010), there is no conclusive evidence that CSR initiatives have improved financial performance in corporations (Garcia-Castro, Ariño, & Canela, 2010; Nelling & Webb, 2009; Shazad & Sharfman, 2017; Surroca, Tribó, & Waddock, 2010). If a company is purely seeking to invest in CSR to yield a financial return, the business case may not be compelling enough to merit an investment, especially if firms that engage in CSR earn the same rate of profit as firms that do not (McWilliams & Siegel, 2010). Finally, Waddock et al. (2002) suggest that meaningful CSR initiatives truly responsive to the community can take years to develop. Given these tensions, can CSR ever be integrated into a corporation in a way that makes sense from economic and societal standpoints? For sub-Saharan Africa, the conclusion of these authors is that the most effective CSR strategy is for MNCs to focus on the first three sections of Carroll's CSR pyramid, with an emphasis on legal and ethical behaviors.

Practical application of the emphasis on legal and ethical behaviors can be highlighted with brief case studies of three publicly-traded oil and gas companies based in Houston, Texas. All three operate in sub-Saharan Africa, and all three engage in CSR both in environmentally-sustainable methods of extraction and philanthropy by supporting local or global charities. These companies were selected because they face the same constraints of being based in the US but operating in sub-Saharan Africa in the oil and gas industry. For each company, data reviewed included websites, corporate filings including K-1s, and corporate codes of ethics.

In their research of 100 companies, including those in the extractive industry, Epstein and Rejc Buhovac (2017) established that ethical companies are those that have a working code of conduct, have education programs around ethics, and honor internationally-known human rights programs. Increasing transparency is another way that corporations can strengthen ethics programs, and a key way to do this is by joining EITI and other organizations that require the disclosure of revenues (Gupta, 2017). VAALCO and Erin Energy have faced a number of ethical breaches, while Noble Energy has not experienced ethical breaches with its operations in Africa. A review of websites and annual reports indicates that Noble has significantly more transparency than either VAALCO or Erin. While there are many factors that influence a firm's profitability, using stock price as a basis of comparison, Noble continues to perform much better than either VAALCO or Erin.

VAALCO, based in Texas, operates primarily in Gabon and Angola. The company's home page contains no mention of ethics (VAALCO Energy, Inc., 2018b). The code of conduct, posted as a downloadable PDF, is overseen by the company's General Counsel and focuses primarily on compliance in "accordance with the highest ethical standards and relevant laws" (VAALCO Energy, Inc., 2016b, p. 4). VAALCO's values include "honesty/integrity, treating people fairly, high performance," and several other process-related goals (VAALCO Energy, Inc., 2018a). With a very small market cap of $53 million, its value dropped 89% from 2012-2016 ("Vaalco Energy," 2017). From September 2014 to September 2014, VAALCO's share price declined by close to 80 percent. This led to a group of activist investors that ultimately filing several lawsuits, including a 2015 claim by the Wagner Firm, claiming that VAALCO's board of directors had not fulfilled their fiduciary duties ("Investigation," 2015). In January 2016, the Delaware Chancery Court invalidated VAALCO's charter and bylaws, which included a clause that prevented shareholders from removing corporate directors without cause (Hapler, Talarides, & Keenan, 2016). This may have been the reason that, in preparation for the June 2016 shareholders meeting, VAALCO introduced a comprehensive code of conduct that included a code of ethics for the CEO and senior financial officers (VAALCO Energy, Inc., 2018b). Perhaps in response to this renewed focus on ethics, VAALCO stocks have been rising steadily, passing the $1.00/share mark on May 3, 2018.

Erin Energy, formerly called CAMAC until 2015, was founded by Nigerian-born Kase Lawal as a gas and oil production company focused on sub-Saharan Africa. Like VAALCO, Erin does not have any mention of ethics on its home page (Erin Energy, 2016b). At the bottom of the home page, a brief paragraph on CSR, accompanied by a picture of three smiling children, states the company's commitment to its stakeholders, operating responsibly, creating mutual benefit through positive impact, and respecting human rights (ibid.), although no additional details about what this work entails is provided. The company's Code of Ethics and Business Conduct is found under its corporate governance documents and is also a downloadable PDF (Erin Energy, n.d.). Like VAALCO, the code of conduct begins with a statement that the company "operates in accordance with the highest ethical standards and relevant laws" (Erin Energy, n.d., p. 1). Enforcement of the Code is left to the board of directors, who designates those who will be involved in determining the appropriate consequences (Erin Energy, n.d.). This leaves a considerable amount of discretion to the board on how ethical issues are handled. Erin does post PDFs of its corporate documents and committee charters, and lists a Whistleblower Hotline number (Erin Energy, 2016a).

As CEO, Lawal was also a majority shareholder, owning 57 percent of shares in 2013 and pushed South Africa's Public Investment Corporation (PIC) to acquire a 30 percent stake in CAMAC. On November 18, 2013, PIC agreed to pay $270 million for a 30 percent stake in CAMAC, which only had a stock value of $150 million (Stoddard, 2014). In 2016, CAMAC was also accused of violating the US Trading with the Enemy Act and forced to pay over $19 million to settle charges related to using a plan chartered by CAMAC in a gold smuggling operation in the Congo ("$32 Million," 2016). A shareholder derivative lawsuit was filed in February of the same year accusing Lawal of paying $416 million for oil leases in the Oyo Field in Nigeria that were valued at $217.3 million (Parker, 2016). Erin Energy was purchasing the lease from Allied Energy Plc, another company controlled by Lakas ("$32 Million," 2016). Again, while there are many factors that affect profitability, this ethical turmoil and lack of transparency may have influenced stock prices. Erin Energy (as CAMAC) launched with an IPO in 2008 and sold for $44.37/share. At the end of April 2018, stocks were down to $1.63.

Noble Energy, a larger company operating in gas and oil production throughout the world, has attempted to differentiate itself as a company centered around ethics. With a commitment to the "highest standards of ethics and integrity" (Noble Energy, 2018, p. 1), their Africa focus is on Equatorial Guinea and Gabon. As part of its corporate strategy, Noble has prided itself on operating with transparency. Its home page features its 2016 Sustainability Report titled "Bettering People's Lives" (Noble Energy, 2017b). While a commitment to ethics can be difficult to monitor, Noble publishes all corporate governance documents, political activity, committee memberships, insider ownership and insider transactions on its website (Noble Energy, 2017a). While most of this data could be found in SEC filings and other public sources, publishing it in an accessible format helps underscore its commitment to transparency. In addition, its code of conduct covers every employee of Noble as well as its partners and vendors (Noble Energy, 2018). The Code also begins with a preface by the Chairman and CEO and the President and COO that "we are the company's ambassadors to all of our stakeholders, and the public's confidence is one of our most valued assets" (Noble Energy, 2018, p. 1). While a seemingly minor point, this preface personalizes the Code and indicates that the highest members of corporate leadership are supporting it. While the Codes of VAALCO and Erin are typed lists of guidelines, Noble's Code is more of an annual report, including pictures, well-designed graphics, and a clear "What Should I Do" guide to ethical decision-making that leads an employee through a series of yes/no questions (Noble Energy, 2018, p. 5) that may make the report more accessible and usable than others. Noble also became a supporting member of EITI in January 2010 (Krakenes, 2010). Noble Energy was cited by the EPA for needing to investigate its vapor control systems in its Denver, Colorado facility, and Noble agreed to assess the situation and upgrade their storage facilities ("Noble Energy, Inc. Settlement," 2015). Noble has consistently been trading in the $31 to $38 per share range for the past two years. On April 30, 2018, Noble stock was trading at $33.83.

Recommendations

At its core, CSR is an economic decision. In the US, companies often engage in CSR to demonstrate their social responsibility or reach a new demographic. This decision to invest in CSR is countered by a desired increase in brand value or sales (Rangan, Chase, & Karim, 2015). However, as outlined above, MNCs operating in sub-Saharan Africa do not face the same pressures from civil society or even accountability from local governments to pursue significant CSR. Some MNCs even justify their lack of social investment by stating that the economic risks of simply operating in a developing company is, in fact, a form of CSR (Julian & Ofori-Dankwa, 2013).

One possible objection to our recommendations is that stressing firm profit is more in line with slack resource theory than other theories of CSR such as instrumental stakeholder theory (McWilliams & Siegel, 2010) and that slack resource theory does not apply well to extractive industries. However, slack resource theory and instrumental stakeholder theory do not need to be at odds since "the two constructs are related to each other reciprocally" (Orlitzky, Schmidt, & Rynes, 2003, p. 406).

Building off this concept of the financial and economic risk that is inherent in operating in a developing company, these authors recommend that the CSR strategy that may be the most effective is one that seeks to eliminate corruption by enforcing EITI and other measures that force transparent reporting. As outlined in the Noble Energy case, publishing data in an accessible and easy-to-view format can also demonstrate a desire to be fully transparent. The cost of corruption is significant. The IMF (2016) estimates the annual cost of bribery, which is one form of corruption, to be between $1.5 and $2 trillion. Walker (1999) estimates the annual amount of money laundered in the world is $2.8 trillion. For a perspective, world GDP in 2016 was approximately $75.5 trillion (USD), meaning that, at a minimum, corruption totals two percent of GDP. Substantially reducing the amount of money firms spend on bribery would increase a firm's profitability and improve government performance. Since CSR is a second-best alternative to efficient public goods provision by government, reducing corruption and improving government institutions represent a Pareto superior move compared to weak institutions paired with corporate CSR.

As the world continues to become wealthier and people have more of their basic needs met, consumers will begin to demand more non-material status goods. One of these non-material status goods is likely to be CSR, making CSR a normal good in the economic sense. Therefore, reducing the cost of business through corruption reduction is an even more pressing matter for firm profitability in the long-run.

Conclusion and Future Study

As an overview piece, this article has several limitations and presents many additional opportunities for research. This research was limited in quantity and type by the cases represented. To broaden the research, a more comprehensive qualitative and quantitative study can be conducted to include in-depth analysis of ethical and legal activities of extractive industry corporations. The study was also limited to synthesizing the discovered findings which could be subject to other interpretations. Additional research can be completed to gain more insight into the interpretations, particularly to prove or disprove a link between ethical behavior and financial profitability. Suggested research could also include a quantitative study assessing the extent to which countries that have implemented EITI in some accord have decreased the level of corruption in their countries. Since a primary goal of reducing corruption is leaving more profit in the country and decreasing illicit outflows, research could also be completed to analyze the extent to which this is occurring in countries that support EITI.

While there has been some initial research on the effectiveness of EITI (Keblusek, 2010), additional qualitative research could be conducted to determine if EITI is, in fact, the most effective means of addressing accountability on both the side of MNCs operating within sub-Saharan governments as well as the governments themselves. A related approach to this research would be looking at differences between countries, such as Nigeria, that have made the reporting component of EITI a legal requirement for MNCs operating in the country versus countries that have voluntary EITI reporting requirements.

Third, additional quantitative and qualitative longitudinal studies can be undertaken of corporations operating in sub-Saharan Africa to determine if a commitment to transparency ultimately impacts profitability. Corporate Social Responsibility is a growing part of how firms conduct business, particularly since the cost of gathering information continues to decline, meaning consumers have more information about how firms behave. As consumers become more knowledgeable, they will continue to press companies to enact CSR. Therefore, the pertinent question regarding CSR is not whether firms should or should not engage in CSR but rather what type of CSR is most beneficial. Furthermore, if a corporation wants to effectively engage in sustainable CSR, the measures implemented should come from the company's strategy and be measured (Maas & Boons, 2017). As illustrated by Carroll's Pyramid of Social Responsibility, the authors believe that MNCs operating in the extractive industries need to focus first on acting ethically. While no company is infallible, Noble Energy presents a case study of a commitment to ethics stemming from its founding strategy along with transparent posting of financial and business dealings. Corporations acting ethically can potentially transform the way business is conducted in the extractive industry, and this could ultimately be of greater benefit to stakeholders than isolated CSR initiatives.

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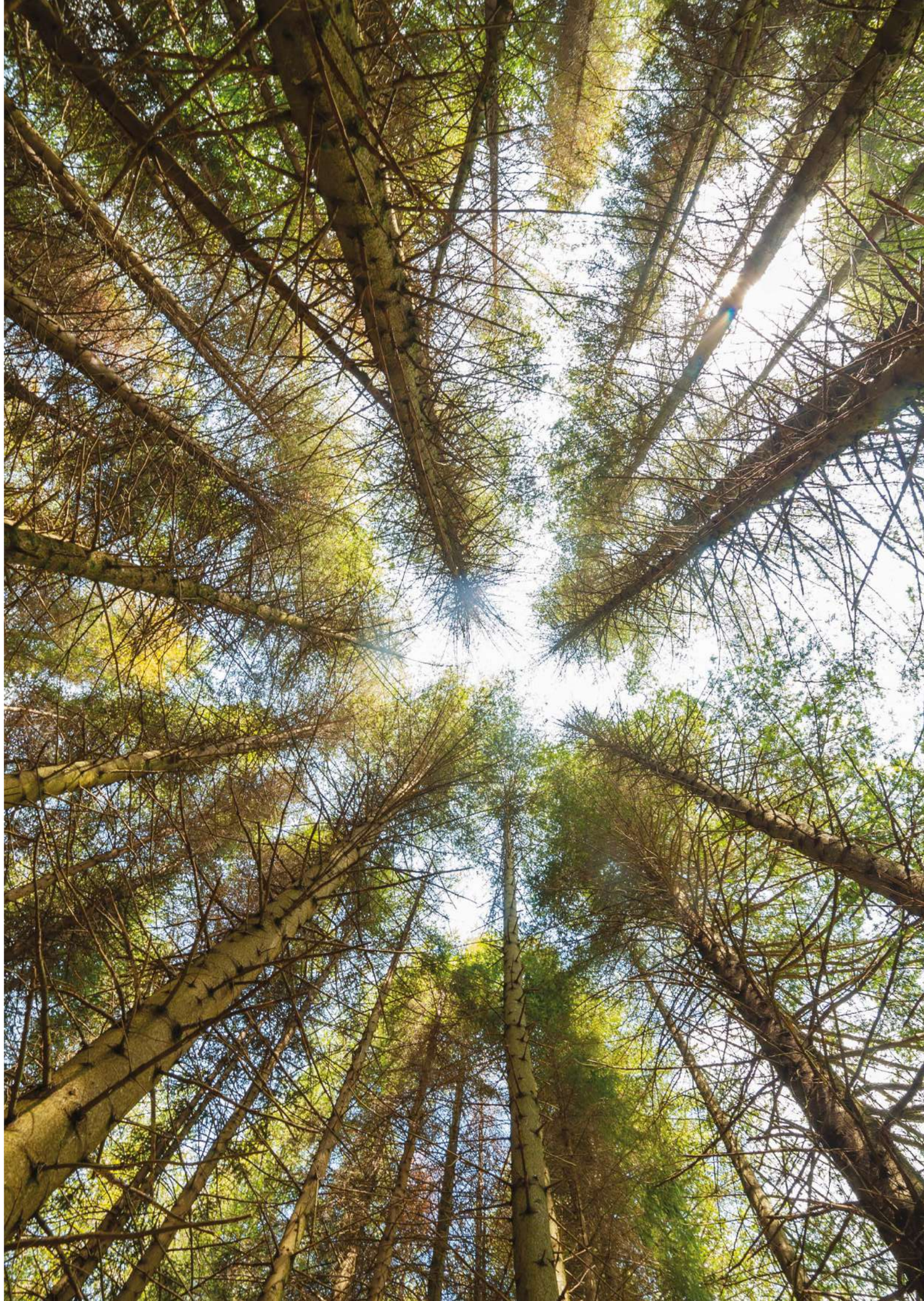

The Future of Work: Work for the Future

AUTHOR: SIMON STOEPFGESHOFF

Abstract

The purpose of this article is to shed some light on a term that is used more and more frequently in political, economic, management, organizational, and leadership literature: the "future of work." Taken from both recent research and the practical world, different perspectives on the topic are provided, and relevant identified concepts typically associated with the term are reviewed and structured. At this point, there is no common understanding of the term, and it is argued that it should be "de-composed" to identify the different concepts along different dimensions to get to a more holistic perspective on the ongoing evolution of work across industries and economies.

Keywords: Future of work, eco-system strategies, automation, future jobs, innovation and collaboration, open organizations, industry convergence

Introduction

"Have We Reached Peak Human?"

This question -- an analogy to the term "Peak Horse" when automobiles were introduced more than 100 years ago -- illustrates in a thought-provoking manner what the debate is about: the fear that there is no work left for humans, as "work" will be largely automated. In recent years, the term "future of work" has emerged in literature as well as in the practical world as an attempt to characterize today's conditions in the workplace, may that be at an individual (Leonhard, 2016), organizational (Boudreau, Jesuthasan, & Creelman, 2015), or industry level (Chui, Manyika, & Miremadi, 2016). A deeper look behind the meaning of the term reveals that there is not yet a common understanding of its significance. It is used rather broadly and vaguely to capture, describe, and explain ongoing trends and changes in the workplace. It is evident that further clarification is needed for an aligned understanding of the term in order to advance research on the topic. The following tries to develop an integrated framework to enable a conceptual understanding of the related concepts and research fields.

Origin of the Term

Work and how it gets done has been at the heart of organizational theory ever since Taylor's management research to more recent concepts like "process organization" in the 1990s. The underlying assumptions, however, had always been that there is sufficient "work" for humans, whether it be manual or "brainy" work, and that technology's role was to assist in executing work. The new dimension of the discussion refers to the fear that, going forward, technology will no longer *assist* but rather completely *replace* work formerly done by humans. This shift has made the discussion a political one. This is not a new debate per se, but the extent to which jobs and human work are threatened nowadays is much more radical and far-reaching than in previous waves of automation (e.g., the first industrial revolution). The core question implied relates to the division of labor between man and machine typically associated with manufacturing industries, but recently also reaching into previously considered "safe" industries such as auditing (World Economic Forum, 2016) and law (Leary, 2018).

Industry- and Job-Related Considerations

An entire stream of research has been dedicated to analyzing how the nature of work has evolved in certain industries. More specifically, it assesses the impact of automation on employment and the number of jobs. An initial early phase of research focused on the manufacturing industries, and it is this discussion that has triggered the initial debate around the topic. Assuming automation is understood holistically as the increased use of robots and artificial intelligence, the key question is whether it has a positive or negative impact on jobs across different industries. Based on a historical perspective, David H. Autor (2015) argues that automation does not only substitute labor but that it complements labor in a way that leads to an even higher demand for labor. He acknowledges that many middle-skilled jobs will be susceptible to automation, but there will be continued demand for a mixture of tasks requiring a broad range of skills. Autor cites medical support occupations as a field that will never be completely automated. Gartner, Inc. (2017) argues along the same line estimating that the creation of jobs will outweigh the loss of jobs through artificial intelligence (AI) and automation, with AI creating around 2.3 million new jobs while eliminating "only" 1.8 million jobs. Brynjolfsson and McAffee (2012) provide evidence for the opposing view. Based on their research of the post-2008 era, they conclude that, in spite of the economic recovery, employment is lagging due to higher levels of automation. They believe that the ongoing technological revolution is radically redefining work, value creation, and the distribution of value in ways never before seen in history. Systematically, companies develop and use technological equipment and software much faster than the rate of employment, leading to a systematic decrease of work for humans.

Subsequent analysis takes a look at which specific types of jobs will experience decreasing demand versus which types of jobs will remain or increase. The World Economic Forum (WEF) (2016) concludes that office/administrative jobs along with jobs in the manufacturing and production area will be hit the hardest, while jobs in the managerial space, specifically those related to engineering, mathematics, and computing fields will experience increasing demand. There is widespread agreement that all jobs with a high level of routine will be at risk (Chui, Manyika, & Miremadi, 2016) and that a differentiated analysis needs to be made. For example, non-predictable versus predictable physical work can be differentiated, the latter being at the highest risk of being automated. Across a variety of jobs which were traditionally executed entirely by humans, many tasks will be largely automated. This will lead to jobs that are re-calibrated, jobs that are eliminated, or new jobs altogether.

At this point in time, predictions indicate that any job which is transactional in nature will be at risk while jobs requiring complex problem-solving skills, contextual understanding, cognitive skills, systems skills, and also empathy and creativity will remain key for the future workforce. Completely new jobs include jobs like a drone-operating farmer. Anticipating that drones will support farmers to identify insect problems and watering issues, some of the traditional farmer activities will become obsolete. Another possible future occupation is a health care coordinator, who will coordinate and make sense of the rapidly growing volume of personalized medical health data from various sources (wearables, fitness, insurance, medical records) in order to consult individuals on health issues.

Figure 1. Jobs potentially impacted by higher levels of automation

Job	Potential to automate
Lawyer	E-discovery, identification of similar cases, non-disclosure agreement (NDA) validation
Accountant	Automated audits and tax declarations
Radiologist	Automated diagnosis of diseases
Reporter	Automated generation of news
Marketing Manager	Personalized advertisement, market research
Financial Advisor	Robot-advisory
Financial Asset Manager	Algorithmic trading

Company Strategic Considerations

In a data-driven and digital economy, the rules of competition are changing significantly. Competitive threats are no longer coming solely from within an industry but from the outside (e.g., start-ups), disrupting entire industries and changing existing industry paradigms. These disrupters are entering formerly well-shielded industry sectors very quickly and aggressively, without many of the regulatory or even cultural limitations traditional players face. Traditional strategic tools and methods are considered insufficient to deal effectively with disruption. Thinking in classical terms of product-market combination is replaced by thinking in eco-systems with the frontiers of traditionally separate industries continuously blurring. The mobility eco-system has been researched for a number of years. Cars have been redefined as "*mobile data centers.*" Google, for example, has considered offering its electrical cars to the city of London for free because the collection of data is the real value driver. Who, only a few years ago, would have imagined that completely independent industries such as the automotive and healthcare industries would eventually converge to form a future eco-system? Drivers who sit every day, at the same time, for the same distance, in a car driving to work are now viewed by clinical developers as ideal participants for a "clinical" trial as the monitoring conditions are stable and predictable. In an innovative twist, the big automotive companies can be co-opted to develop methods for blood pressure monitoring via the steering wheel. Ethical and data-related questions remain, but the convergence of these industries is inevitable with big industry players converging (e.g., automotive and traditional pharma) and perhaps, even more importantly, with big and small companies converging. Work here gets done in "eco-systems" in which the traditional product-market perspective on strategy is shifted towards the question of defining an eco-system strategy. Which eco-system, which partners, and which part of new emerging value chains a company wants to capture form these forward-looking strategies.

Company Organizational Considerations

The described macro trends and strategies that are shaping the future of work appear to also impact the way in which companies are organized and by whom work is executed. Work has traditionally been viewed as a group of tasks allocated to positions, which are segregated into jobs, functions, and departments that are captured on organizational charts. These jobs/functions have traditionally been the object of analysis. Recent research (Boudreau, Jesuthasan, & Creelman, 2015) suggests that the object of analysis is no longer a job/function in which a number of specific tasks are grouped, but, instead, the new focus is on a specific task itself. This is a major shift in the way to think about organizational structures. The organizational design parameter "differentiation" around job/function has evolved towards that of the individual, specific tasks of a function. Differentiation as an organizational design parameter has been understood mostly internally; however, it now refers also to how jobs and tasks are being differentiated with an external company perspective. There are several drivers behind this development. One of them is the increasing use of what is known

as "talent platforms" or other similar web-based platforms through which individuals (mostly freelancers) offer a particular service or product or "task" to companies. The related competence within companies is frequently cited as "let the network do the job." This is an acknowledgment that a particular task or part of a job can often be performed more efficiently in terms of cost and speed by highly specialized resources wherever they sit around the globe (Manyika et al., 2016). A second driver is the increasing use of AI and automated learning. Traditionally integrated and holistic jobs are cut and calibrated in new ways with parts of the job automated. This is not new; we have seen this in the industrialization process in the last century. Nevertheless, this phenomenon is now widespread across different industries and different job categories.

Next to this micro level of analysis (=task), these changes also impact the broader structural setup and culture of companies. Some years ago, discussions started around work in virtual structures. However, the virtual dimension was still mainly focused on internal company aspects (e.g., working across different time zones, home office, outsourcing, and offshoring). Organizational concepts like "holacracy" (Robertson, 2015) have taken this to a further extreme with organizations seen as a network of teams, simultaneously far more fluid and less hierarchical. In recent years, the external perspective of "open" organizations has augmented the concept. *Exponential Organizations* (Ismail, Malone, & van Geest, 2014) cites a number of features of modern organizations that corroborate the increased openness of organizations. Particular characteristics such as "staff on demand," "community and crowd," and "leveraged assets" demonstrate ways in which organizations easily tap into external resources leading to more hybrid structures and fluid borders of the organization. Ismail, Malone, and van Geest suggest that flexibly sharing and accessing resources needed for work is much more appropriate in an information-based world than owning the assets. In the past, there had been a disconnect between the scaling of technology versus the scaling of organization, and these features (along with others) are considered critical ingredients to support organizations' ability to keep up with rapidly evolving technologies.

Along with this evolution towards more structurally open organizations, work methods and tools have also significantly changed the nature of how work gets done. Two main objectives emerge around new levels of customer-centricity and new ways to foster product or business model innovation.

Regarding customer-orientation, the design thinking (Brown, 2009) method has gained widespread popularity by not only putting the customer at the center but focusing on the customer's concrete user experience. Thus, the starting point is with the human, and adapting technology to the human rather than beginning with technology and teaching the human to adapt to the technology. The work methods applied differ significantly from conventional ways to execute work: from un-tested assumptions about customer needs to evidence/feedback collection through observation and feedback loops, from time-consuming perfect product ambitions to rapid prototyping and faster work cycles.

The second approach emerging and impacting work methods is known as the "lean-start-up" method (Ries, 2008). Start-up ideas can be executed much more quickly applying principles like "build-measure-learn." This leads to creating a minimal number of viable products rather than focusing on a single, perfect product that does not meet the customer needs. While originating from the start-up world, this method is now adopted by large companies as well to drive an intrapreneurship culture, thus combining the advantages of "big" (resources, know-how) and small (speed, flexibility).

While both approaches rely on different tools and work cycles (see Mueller & Thoring, 2012, for an in-depth analysis), they also show similarities around creating feedback-based evidence as quickly as possible, a trial-and-error logic that puts experimentation first, and a pace and speed of action to avoid long development cycles no longer considered adequate for today's world.

Summary and Implications

Looking at the practical world as well as research, the future of work is a complex and multi-facet phenomenon spanning across different analytical levels.

The initial discussion was triggered by increasing levels of automation and the related debate about potential job losses across industries. On a strategic as well as organizational level, this narrow focus has broadened into the question of how work is being organized and executed within existing companies. This in turn calls for articulating an integrated and holistic perspective on the "future of work." The respective developments across the three levels influence each other. Any company wishing to reshape the way it does innovation by tapping into eco-system networks will forcefully have to reconsider its working modus, structure, and methods. Furthermore, any company planning and organizing its future workforce, skills, and careers in the light of automation and artificial intelligence will have to reconsider the macro-trends in its industry.

Figure 2. Meaning of the term "future of work" across different levels

Level	What is meant by "future of work"?
Macro-/industrial level	**Automation of work** Consequences: Skills and jobs for the future Social-economic considerations (e.g., basic income)
Company strategic level	**Work in eco-systems and converging industries** Consequences: Product or service strategies become eco-system strategies
Company organizational level	**Work in open and fluid organizations** Consequences: From positions to tasks Leveraging external resources New work methods

Limitations and Future Research Needs

This contribution is based on literature available today, but it needs to be acknowledged that, given the many open questions and the speed of the developments, new research on the topic is produced at a rapid pace. A structured and consolidated review cannot claim to be more than a snapshot. One clear limitation is the lack of solid data to create more fact-based evidence to back statements (see the example of Uber as a positive exception, Berger, Chen, & Frey, 2017). Many topical areas are still in an infancy state regarding scientifically sound results and thus remain on the level of hypothesis (i.e., anecdotal, narrowly technology-focused, or simply estimated predictions). Given the political nature of some of the areas concerned, it will be important to avoid the use of un-validated results for political argumentations.

While some aspects of the future of work have been well researched and have received widespread acceptance in the practical world (for example, design thinking), other areas need further research to provide more evidence on the controversial critical questions:

1) The biggest open issue is whether automation will increase or decrease the volume of jobs. The social-economic implications of this question are immense for all stakeholders involved including those from the political arena. More research to answer this question is needed, even in the short term. This research should go beyond the general level and take a much closer look at particular industries, jobs, and companies to validate assumptions about the future evolution in order to provide practical answers to decision makers.
1) On a company level, further research is needed on the emergence of eco-systems, e.g. the question of which eco-system to create, co-create, or join so that organizations can partner within or across industries and articulate their strategies. How large companies can leverage the advantages of cooperation with small companies/start-ups to foster intrapreneurship and drive their innovation agenda is a critical question (see, for example, the ongoing scientific debate about contextual versus structural ambidexterity around innovation, Altman & Tushman, 2017). The specific managerial, leadership, and system-related conditions to enable work being performed effectively in "eco-systems" remains a field for future research. Advanced research on this topic is needed in particular looking beyond the "usual" suspects of the new economy (Facebook and Google), considering more "traditional" organizations and how they can transform with an open eco-system perspective.

More work for the future is needed to provide answers to these questions.

Figure 3. Associated concepts to the "future of work"

Dimension Work in the future will be	**Company-internal**	**Company-external**
Collaborative and less hierarchical	Organizational setups like "holacracy" or "the exponential organization"	Collaboration and strategies for eco-systems
Innovation-driven	Application of methods like design thinking or lean start-up	Convergence: new business models at the frontiers of industries
Increasingly automated and digitized	Jobs, even "brainy" jobs, will be re-calibrated cutting out certain tasks subject to automation	Industries being disrupted or reshaped (e.g., automotive industry, the "connected car")

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EXPLORING COMMUNICATION SUCCESS FACTORS IN DATA SCIENCE AND ANALYTICS PROJECTS

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Abstract

This research explored commonly held communication principles about the management of successful data science and analytics projects. These principles include that the project builds upon an alignment with strategic outcomes, projects are fully evaluated before initiation, business objectives for the project are clearly stated, and project goals are clearly established in advance. A questionnaire was distributed to a non-stratified convenience sample to collect viewpoints on these key issues from the perspective of 60 experienced data science and analytics project managers and analysts. A qualitative Likert-scale evaluation of responses showed that operating managers rarely understand how projects align with strategic goals, projects are not fully evaluated in advance, and neither business objectives nor project goals are clear. These findings are significant because they show serious communication gaps between formal project management theory and the application of the theory to data science and analytics projects.

Keywords: analytics, data science, data mining, project management, analytics methodology, communications

Introduction

Data science and analytics is a field that extracts insights from data in various forms (Dhar, 2013). Data science and analytics is an evolution of other data analysis fields including data mining, statistics, and machine learning (Leek, 2013). Organizations use data science and analytics based on the value it brings as this practice has been documented to decrease fraud, reduce customer and product churn, improve target marketing, identify new markets, improve operations, and increase profitability (Sim, 2014). Extracting insights using data science and analytics involves many different steps and skill sets to achieve a result, thus most of these initiatives are completed as projects (Sim, 2014).

Understanding what makes data science and analytics projects a success is a challenge. Sim (2014) provided an initial study on data mining success factors in 2003 and republished the results in 2014 to a wider audience based on the original study. According to Sim (2014), the 2003 study represents a basis for data mining Critical Success Factors (CSFs) that decision makers and researchers can use to increase data mining success. The study was based on 2003 survey data, and Sim outlined that with the changes in the industry, new research should be pursued to better understand success factors. Knowing more about the success factors can also assist in preventing project failure.

Gartner Research reported that the market for data science and analytics will be a top priority for organizations through 2017 (Gartner, 2013). Gartner's research reported that data science and analytics projects had a failure rate of greater than 50% where projects failed to deliver the benefits agreed on at the start of the project. As part of Gartner's report, multiple failure points were listed including not having a clear strategy which defines the expected outcomes.

The general problem is that with the digitized world, more data exists than ever before and organizations are attempting to mine this data for a competitive advantage; however, many organizations struggle as data science and analytics projects deal with transforming data into information to be used in decision-making (Bole, Popovič, Žabkar, Papa, & Jaklič, 2015; Davenport, 2014, 2015; Davenport & Harris, 2013; Sim, 2014). Highly competitive organizations view data science and analytics as a capability to enhance decision-making by discovering new knowledge to gain a competitive advantage (Bole et al., 2015; Davenport, 2014, 2015; Sim, 2014). Understanding what makes a data science and analytics projects successful can assist organizations in developing this as an organizational capability.

Data Mining to Data Science

Data mining is widely considered a subfield of computer science (KDD, 2014). Data mining is defined as an interdisciplinary field involving artificial intelligence, statistics, databases, and machine learning (Sim, 2014). Data science and analytics emerged as the next generation of data mining due to the increased need to use analytical abilities to find, extract, and interpret large amounts of data. Data science and analytics is different than data mining due to the need to: manage large disparate sets of data across hardware and software constraints; ensure consistency of data; wrangle data sets; merge data sets; use visualization to understand data; incorporate statistics and algorithms using data; and present findings. Data scientists are expected to produce results in days versus months by completing exploration and iterative analysis to produce results in business context (Davenport, 2014).

The emergence of data science can be traced back to the growth of the field of statistics (Cleveland, 2001). Cleveland introduced the field of "data science" and outlined it as a new discipline using computer science and data mining. According to Cleveland, data science promotes innovation and statisticians partner with computer scientists to promote advances in computing with data. To reinforce the emergence of data science as a field, the *Data Science Journal* (https://datascience.codata.org/) was launched in April 2002 to publish research on the use of databases and data systems in science and technology. *The Journal of Data Science* (www.jds-online.com) focuses on the application of statistical methods and addresses all aspects of data use include collecting, analyzing, modeling, and applying.

The addition of "analytics" to the field of data science emerged in 2005 in a report from the Babson College Working Knowledge Research Center (Davenport, Cohen, & Jacobson, 2005). In the report,

analytics was described as a new form of competition focusing on the use of data and fact-based decision-making. Organizations are employing statistics, quantitative analysis, and prediction in place of competing in traditional areas.

Yau (2009) addressed the rise of data science and analytics which combined different areas of expertise including math, statistics, data mining, computer science, and information visualization. Yau highlighted that the role of the data scientist publically emerged in 2009. Loukides (2010) further expanded on data science and analytics to include an aspect of entrepreneurship and the ability to iterate to create a data product. Data science and analytics includes defining a problem, collecting data, and conditioning to draw a conclusion. Mason and Wiggins (2010) defined a taxonomy of data science and analytics as obtain, scrub, explore, model, and interpret data which includes a blend of statistics and machine learning.

The use of data science and analytics is no longer limited to scientific fields (Davenport, 2014. The use of data has evolved into the "data economy" where organizations are focused on being data-driven (Davenport, 2014; Davenport & Harris, 2013). This has led to the development of data services and products which are created for customers based on data discovery. Examples of data products include customer path analysis, social network analysis, and service offerings based on the Internet of Things (IoT) (Davenport, 2014; Davenport & Harris, 2013). Data products such as recommendation engines (i.e., Amazon and Netflix) or quoting engines (Geico Insurance) are examples of data products that provide a competitive advantage.

Data Science and Business Benefits

The value of data science and analytics projects are defined by their business impact (Dhanrajani, 2015). Data science and analytics at a high-level focuses on fostering new thinking, exploring unknown patterns in data, challenging the status-quo, improving continuously, and identifying business drivers. Dhanrajani outlined multiple examples of business benefits made possible through the use of data science and analytics.

Amazon launched its recommendation engine which is a data science product that recommends products to a buyer. Dhanrajani (2015) approximated that 15% to 20% of Amazon's business comes from recommendations; customers rely on the recommendation engine to explore other related products or packaged deals. United Parcel Service (UPS) created the On-Road Integrated Optimization and Navigation (ORION) system which optimized routes for UPS drivers using many different data sources. UPS improved its routing schedules resulting in better customer service and saving millions of dollars (Dhanrajani, 2015).

Other examples of business benefits include improving product categorization. Online retailers may not classify products the way that customers think about them. Data science and analytics projects seek to improve product categorization by all product features such as shape, purpose, look, and product text descriptions. Airlines have predicted more accurately the percentage of passengers who purchase a ticket but fail to take the flight, which enables airlines to sell more tickets. This prediction minimizes lost revenue and reduces the risk of overselling a flight (Dhanrajani, 2015). Many industries are seeing benefits from data science and analytics. Retailers, insurance companies, financial institutions, and telecom companies are refining customer segmentation to increase customer profitability, drive customer behaviors, and increase engagement (Dhanrajani, 2015). Optimization of prices, reduction of risk, and propensity to buy are other capabilities enabled by data science and analytics. Deriving business benefits from data science projects is at risk due to the lack of insight on how to improve the success rate of these projects.

Data science and analytics projects are on the rise due to perceived business benefits; however, the success and failure factors of data science projects are not well known or researched (Chang, Kaufman, & Kwon, 2014; IBM, 2010; Kambatla, Kollias, Kumar, & Grama, 2014; Li, Thomas, & Osei-Bryson, 2016). Data science and analytics projects are more complex than data mining projects due to: larger volumes, variety, and speed of data; the need to have scalable analytic solutions; the increase in data science and analytical projects; the lack of deep data science and analytical skills sets; the need to shorten the data acquisition to decision cycle; and an organization's analytical maturity (Chang et al., 2014; IBM, 2010; Kambatla et al., 2014; Li et al., 2016).

> **"Communication is a success factor in project management and in data science and analytics projects, particularly contributing to attaining business benefits."**

Communication is a success factor in project management and in data science and analytics projects, particularly contributing to attaining business benefits (Demirkan & Dal, 2014; IBM, 2010; Marr, 2017; PMI, 2013; Roberts, 2015; Sharma & Osei-Bryson, 2009). Leveraging data mining success factors can be a basis for data science planning, but the research here is limited. Success factors are very broad, so the focus of this research is to explore the contribution of communication practices to attaining business benefits. Thus, the scope of project communication in this research will focus on how business benefits are defined and communicated in data science and analytics projects.

Project Management, Inc. (PMI) (2013) outlined that, to improve communication, organizations should close the gap around communicating business benefits. Consistent communication protocols and knowledge sharing enables project teams to meet business goals efficiently. Some of the best practices to improve communication include clearly defining project business objectives, ensuring projects are aligned with organizational strategy, defining clear project goals, and evaluating project expectations and success factors up front. These best practices are the focus of this research.

Project Failures and Communication

Demirkan and Dal (2014) outlined several reasons why data science and analytics projects fail, and one of the top reasons listed is the lack of identifying clear business need and value. Before the investment in a data science and analytics project occurs, organizational leaders should have a clear idea of the business outcomes or problems to be addressed. Some suggestions made by Demirkan and Dal to address this failure point include ensuring project management ownership, clear project alignment with the organizational strategy, and business stakeholder involvement.

Demirkan and Dal (2014) addressed other failure points including having a departmental focus versus a strategic focus on data science and analytics, having islands of analytics, not addressing data quality, having no clear communication plan on analytics, not planning for data quality, and not seeing data science and analytics as a core capability requiring an ecosystem of technology, people, and process. Most of the failure points align with lack of strategy and communication of strategy – which includes communication of the benefits of data science and analytics.

Roberts (2015) posited that data science and analytic projects often start with the wrong questions to be answered. According to Roberts, data science and analytics projects start with the expectation that something valuable will be discovered, and this becomes the business case for the project. Data science and analytics projects that start as an exploratory project fail because the scope is too broad to drive useful analysis. Roberts outlined that the better approach is to start a project with established goals that map to creating business benefits. Projects with established goals follow a hypothesis-testing approach that begin with a set of defined questions. By approaching data science and analytics projects with a clear goal, business justification is paired with business action.

Marr (2017) outlined that data science and analytic projects start with high expectations, but a high number of projects fail. One failure point outlined by Roberts is that projects start out without having clear business objectives. Roberts argued that project teams start with the "how" without understanding the "why." Before embarking on the "how," project teams need to understand what problem is to be solved. Other project failures are linked to not having a clear business case (which impacts having clear business objectives) and poor communication. Poor communication is linked to not clearly outlining the "why" of the project and the ability of project leaders to guide the project based on business objectives.

Historically, communicating the business benefits of data mining has not been a focus in data mining projects. Sharma and Osei-Bryson (2009) highlighted the lack of focus and formality on the business understanding phase of data mining (CRISP-DM), which traditionally has been implemented in an ad hoc fashion. Sharma and Osei-Bryson's research exposed that little research existed that provided a detailed description of how this phase was implemented. The business understanding phase is where business objectives, hypothesis formation, and project goals and planning occur. Quite the opposite is true of other phases of the data mining process such as modeling, where much research exists. Sharma and Osei-Bryson outlined that the business understanding phase is the most important as this phase influences the decisions made in subsequent phases such as data preparation, data understanding, modeling, evaluation, and deployment (Davenport, 2014; Davenport & Harris, 2013).

Role of Communications in Projects

According to *Forbes* (2011), nine out of 10 organizational leaders outlined that communication is a critical success factor in strategic initiatives, and half of the leaders surveyed identified communication as a key component for strategic planning and execution success (PMI, 2013). Project managers identified that stakeholder communication is the most critical success factor in project management. According to PMI (2013), two of five projects do not meet the intended business benefit, and 50% of these failed projects are caused by communication failures. Ineffective communications lead to fewer successful projects and fewer projects meeting original goals.

Project communication includes defining the project business benefit and contributing to organizational strategy (PMI, 2013). When organizations align the strategy with execution, projects are more successful. Organizations that focus project communications on business benefit have more successful projects versus organizations that do not communicate this information or do it less frequently. Project leaders are able to focus project teams on the right outcomes when business benefits are relayed to the teams frequently and clearly, thus providing the context for the project.

Projects are delivered via a methodology belonging to communication practices (PMI, 2013). Data science and analytical projects are iterative and exploratory in nature and follow data mining methodologies. While multiple methodologies exist for data science and analytical projects, the generally accepted methodology used is the Cross Industry Standard Process for Data Mining (CRISP-DM) approach (Gartner, 2013; Sharma & Osei-Bryson, 2009).

CRISP-DM is a data mining process model that conceptually describes the stages that are used to tackle data mining problems. CRISP-DM was originally created to align with data mining, but it has organically evolved into the primary approach used by data scientists. CRISP-DM is broken into six stages which appear to be in sequence; however, the stages are not strictly sequential, and iterating through the stages is expected (Marbán, Mariscal, & Segovia, 2009). The six stages are business understanding, data understanding, data preparation, modeling, evaluation, and deployment; communication of business benefits is covered in the business understanding stage. The business understanding stage contains the steps to define business benefits and objectives. A review of literature has uncovered seven Critical Success Factors (CSF) in data mining, two of which are business mission and communication (Sim & Cutshall, 2003). Both these areas are typically addressed as part of the "business understanding" phase of CRISP-DM, and little research exists on how this phase is accomplished (Sharma & Osei-Bryson, 2009). The review of literature established the four key areas to focus on to explore the communication of project business benefits: ensuring projects are aligned with organizational strategy, defining clear project goals, and evaluating project expectations and success factors up front.

Study Description

This study examined communication practices in data science and analytical projects, specifically the practices used to communicate the purpose of the project and expected business benefits. These areas were identified as CSFs and also as a failure point at the start of projects (Sharma & Osei-Bryson, 2009; Sim, 2014; Sim & Cutshell, 2003). Communicating the purpose of the project and outlining business benefits were further defined based on existing research and divided into the subcategories of project selection and alignment, initial project evaluation, setting clear business objectives, and defining clear project goals. These four areas were used to develop hypotheses and design the survey instrument. By focusing on these areas, data science and project leaders can understand how to communicate business benefits to increase project success. Based on the lack of research and the literature review, the following hypotheses were formed to examine communication practices used to communicate business benefits in data science and analytics projects:

H1: Project Alignment: Hypothesis: Data science and analytical projects are selected based on alignment with organizational strategic outcomes.

H2: Project Evaluation: Hypothesis: Data science and analytical projects are fully evaluated before initiated.

H3: Business Objectives: Hypothesis: Business objectives for data mining projects are clear.

H4: Project goals: Hypothesis: Goals to be explored in analytical projects are clearly established ahead of time.

Based on these four areas, the following research questions were formulated:

R1: Are data science and analytical projects selected based on alignment with organizational strategy and outcomes?

R2: Are data science and analytical projects fully evaluated before project initiation?

R3: Are business objectives for data science and analytical projects clear?

R4: Are data science and analytical project goals clear prior to project start?

The research questions explored areas that define communicating business benefits for data science and analytical projects. Gaining an understanding of an organization's existing practices in this area established a baseline and context for data science and analytical project communications, thus contributing to the identification of communication CSFs. The research questions were used to frame the questions used in the creation of a survey.

Research Results

Four hypotheses were investigated and drove the survey design, the collection of data, and the data analysis. These hypotheses were used to create the research questions in the area of understanding data science and analytics project communication in the areas of project alignment, project evaluation, business objectives, and project goals – all of which contribute to understanding the business benefits of the project. The survey instrument was posted in LinkedIn professional groups with membership that had experience completing surveys. The survey instructions included a description of the experience required of three or more years of participating or leading data science and analytics projects before taking the survey. The total membership of the professional groups where the survey was placed was approximately 500,000 members.

According to Beamish (2010), there are two primary groups of individuals that join online professional groups – contributors and lurkers. Contributors are those that post and respond to posts on online groups, and lurkers are those that browse and read messages but rarely or never contribute. Based on participation studies, on average, lurkers represent over 90% of the membership in online groups and contributors on average represent only 1-10% of the group (Beamish, 2010). Using the research from Beamish, the population size could vary from 5,000 to 50,000 individuals.

The survey consisted of 4 sections and 15 questions. The sections aligned with the research questions, and under each section 3 to 4 survey questions were provided to participants using a 5-point Likert scale of strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). Neutral is treated as neither disagreeing nor agreeing to the questions in the survey. The best measure of central tendency for a Likert scale is the mode versus the mean or the median due to skewness (Fowler, 2013). However, a one sample t-test was used to evaluate whether the results of each question was greater than the neutral value of 3. Hypotheses testing was completed using the Kolmogorov-Smirnov test and the chi-square test.

The survey was posted in the following LinkedIn professional groups on three different days over a four-month period: Data Science Central; Machine Learning and Data Science; and Big Data, Analytics, Business Intelligence and Visualization Experts Community. These groups were chosen based on the high number of members and the high number of daily contributions which were observed over a six month period (June to December, 2016) of ten or more contributions a day. After four months of posting the survey, 60 respondents had completed the survey.

Data Analysis

Survey data using a Likert scale is categorized as ordinal data, where data can only be used to determine that one score is ranked higher or lower than the other. Based on the data type, in this case ordinal, only certain analyses was appropriate (Sullivan & Artino, 2013). Fowler (2013) outlined that ordinal scales are encountered often in research and the typical parametric tests for hypotheses testing do not typically apply. The first reason is that a parametric test relies on data adhering to an interval or ratio scale, and the second reason is that samples are drawn from a population with a known distribution. Because the survey uses an ordinal scale and the population distribution is unknown, nonparametric methods are used in the data analysis (Sullivan & Artino, 2013).

Each research question had three to four survey questions, and each survey question was analyzed focusing on median and frequency analysis as appropriate for ordinal data. The question analysis was then grouped based on the categories of project alignment, project evaluation, business objectives, and project goals.

The first nonparametric approach used was a Kolmogorov-Smirnov test (KS test), which tests for goodness of fit when the measurement scale is ordinal and examines whether frequencies of observations are aligned with the frequencies expected under a null hypothesis. The Kolmogorov-Smirnov test is used to accept or reject the null hypotheses (Sullivan & Artino, 2013).

The second test completed was a chi-square test which was used with nominal data. The five response categories were combined into two nominal categories – agree and disagree where neutral responses were ignored. The chi-square test was used to determine if a relationship exists between two nominal variables in a sample and to accept or reject the null hypothesis (Sullivan & Artino, 2013).

Thus, three different statistical tests were performed on the survey results. A one sample t-test was used to evaluate if the result of each question was greater than the neutral value of 3, and two hypotheses tests were completed – the KS-test and the chi-square test – to accept or reject the null hypothesis.

Findings

The research questions pertained to four areas that comprised the category of data science and analytics project communication (a) project alignment, (b) project evaluation, (c) business objectives, (d) and project goals. Each question was analyzed to determine if the null hypothesis should be accepted or rejected. The results of each question and support for each research question and hypothesis follows.

Hypothesis 1

H1: Project Alignment: Hypothesis: Data science and analytical projects are selected based on alignment organizational strategic outcomes.

H1 Null: Project Alignment: Hypothesis: Data science and analytical projects are not selected based on alignment with organizational strategic outcomes.

Out of the four questions exploring project alignment, the conclusions support that organizations design data science and analytics projects with a strong focus on strategic outcomes; however, operating managers are not clear on how projects align with the goals of the organization, project teams do not frequently meet to discuss project alignment, and data science and analytical projects are not typically part of strategic project portfolios. The overall results support that data science and analytical projects are not selected based on alignment with organizational strategy and outcomes, thus accepting the null hypothesis.

R1: Are data science and analytical projects selected based on alignment with organizational strategy and outcomes? Not supported based on the results of the hypothesis tests and the t-test.

Area of Analysis	Survey Question	T-Test (greater than the neutral value of 3)	KS Test	Chi Square	Final Conclusion
Project Alignment	Q1: Organizations design data science projects with a strong focus on strategic outcomes.	Supported	Reject Null Hypothesis	Reject Null Hypothesis	Reject Null Hypothesis
	Q2: Operating managers have a good understanding of the linkage between their analytical projects and the goals of the overall organization.	Unsupported	Accept Null Hypothesis	Accept Null Hypothesis	Accept Null Hypothesis
	Q3: Project teams frequently meet after starting a project to discuss whether they are maintaining alignment with strategic outcomes.	Supported	Accept Null Hypothesis	Accept Null Hypothesis	Accept Null Hypothesis
	Q4: Data science and analytical projects are typically part of a portfolio of projects created as part of strategic planning.	Unsupported	Accept Null Hypothesis	Accept Null Hypothesis	Accept Null Hypothesis

Hypothesis 2

H2: Project Evaluation: Hypothesis: Data science and analytical projects are fully evaluated before initiated.

H2 Null: Project Evaluation: Hypothesis: Data science and analytical projects are not fully evaluated before initiated.

Out of the three questions exploring project evaluation, the conclusions support that data science and analytical projects do not frequently start with a clear business case, data science and analytical projects do not have measurable success factors established prior to project initiation, and these projects do not have a project sponsor that partners with the team on planning and initiation. The overall results support that data science and analytical projects are not fully evaluated before project initiation, thus accepting the null hypothesis.

R2: Are data science and analytical projects fully evaluated before project initiation? Not supported based on the results of the hypothesis tests and the t-test.

Area of Analysis	Survey Question	T-Test (greater than the neutral value of 3)	KS Test	Chi Square	Final Conclusion
Project Evaluation	Q5: Data science and analytical projects frequently start with a clear approved business case.	Unsupported	Accept Null Hypothesis	Accept Null Hypothesis	Accept Null Hypothesis
	Q6: Data science and analytical projects have measureable success factors established before project initiation.	Unsupported	Accept Null Hypothesis	Accept Null Hypothesis	Accept Null Hypothesis
	Q7: Data science and analytical projects typically have a project sponsor who partners with project teams on project planning and initiation.	Supported	Accept Null Hypothesis	Accept Null Hypothesis	Accept Null Hypothesis

Hypothesis 3

H3: Business Objectives: Hypothesis: Business objectives for data science and analytical projects are clear.

H3 Null: Business Objectives: Hypothesis: Business objectives for data mining projects are vague.

All four questions supporting business objectives were not supported which corroborates that the business objectives for data science projects tend to be vague. Project charters are not created, project teams are not clear on business objectives, and business objectives are not clear and measurable, thus accepting the null hypothesis.

R3: Are business objectives for data science and analytical projects clear? Not supported based on the results of the hypothesis tests and the t-test.

Area of Analysis	Survey Question	T-Test (greater than the neutral value of 3)	KS Test	Chi Square	Final Conclusion
Business Objectives	Q8: Project teams typically create project charters for data science and analytical projects.	Unsupported	Accept Null Hypothesis	Accept Null Hypothesis	Accept Null Hypothesis
	Q9: Project sponsors and project teams define business outcomes for data science and analytical projects.	Unsupported	Accept Null Hypothesis	Accept Null Hypothesis	Accept Null Hypothesis
	Q10: Data science and analytical project teams have a good understanding of business objectives linked to analytical projects.	Unsupported	Accept Null Hypothesis	Accept Null Hypothesis	Accept Null Hypothesis
	Q11: Business objectives for data science and analytical projects are specific and measurable.	Unsupported	Accept Null Hypothesis	Accept Null Hypothesis	Accept Null Hypothesis

Hypothesis 4

H4: Project goals: Hypothesis: Goals to be explored in analytical projects are clearly established ahead of time.

H4 Null: Project goals: Hypothesis: Goals to be explored in analytical projects are not clearly established ahead of time.

The four questions that explored project goals resulted in one question being supported and the remaining three not. Data science and analytical projects frequently start with a problem statement or question of interest; however, project outcomes are not clearly established that support business objectives, project sponsors and teams do not define project outcomes, and the scope of data science and analytical projects are not clear as part of project planning. Data science and analytical project goals are not clear prior to project start, thus accepting the null hypothesis.

R4: Are data science and analytical project goals clear prior to project start? Not supported based on the results of the hypothesis tests and the t-test.

Area of Analysis	Survey Question	T-Test (greater than the neutral value of 3)	KS Test	Chi Square	Final Conclusion
Project Goals	Q12: Project teams typically establish project outcomes that support the required business objectives for data science and analytical projects.	Unsupported	Accept Null Hypothesis	Accept Null Hypothesis	Accept Null Hypothesis
	Q13: Data science and analytical projects frequently start with a problem statement or question of interest.	Supported	Reject Null Hypothesis	Accept Null Hypothesis Accept Null	Reject Null Hypothesis
	Q14: Project sponsors and project teams frequently define project outcomes for data science and analytical projects.	Unsupported	Accept Null Hypothesis	Accept Null Hypothesis	Accept Null Hypothesis
	Q15: The scope of data science and analytical projects is documented and clear as part of project planning.	Unsupported	Accept Null Hypothesis	Accept Null Hypothesis	Accept Null Hypothesis

Significance of Findings

This study examined communication practices in data science and analytical projects. The scope of communication practices focused on the areas of communicating the purpose of the project and outlining business benefits as this area was identified as a CSF and also a failure point in the literature review (Sharma & Osei-Bryson, 2009; Sim, 2003, 2014). The purpose of the project and presentation of business benefits were further defined based on existing research and divided into the subcategories of project selection and alignment, initial project evaluation, clear business objectives, and clear project goals. All four research null hypotheses were accepted, concluding that communication is not a primary focus in data science and analytical projects:

H1 Null: Data science and analytical projects are not selected based on alignment with organizational strategic outcomes.

H2 Null: Data science and analytical projects are not fully evaluated before initiated.

H3 Null: Business objectives for data mining projects tend to be vague.

H4 Null: Goals to be explored in analytical projects are not clearly established ahead of time.

As outlined, data science and analytic project investment is increasing, and communication is a large contributor to project failure.

The failure of communication in data science and analytical projects has strategic and financial implications. Strategic implications include developing data science and analytics as a capability. Developing this capability is complicated by: larger volumes, variety, and speed of data; the need to have scalable analytic solutions; the increase in data science and analytical projects; the lack of deep data science and analytical skills sets; the need to shorten the data acquisition to decision cycle; and an organization's analytical maturity (Chang et al., 2014; Kambatla et al., 2014; Li et al., 2016). The lack of clear alignment with organizational strategic goals complicates the development of data science and analytics as a capability and delays the attainment of strategic goals.

As a result of not developing data science and analytics as a capability, another strategic implication is an organization's ability to maintain a competitive advantage. As previously stated, the use of data science and analytics is no longer limited to scientific fields (Davenport, 2014). The "data economy" is the norm, where organizations are using data science and analytics to be data-driven (Davenport, 2014; Davenport & Harris, 2013). The "digital" lifestyle has led to every action and interaction being captured in data, resulting in new opportunities and insights to study through the use of data science and analytics (Larson & Chang, 2016). By 2016, data science and analytics was considered a core competency organizations needed to cultivate to remain competitive (Larson & Chang, 2016).

The result of not having clear business objectives and project goals is the lack of business value. This has both strategic and financial implications. As noted earlier, the value of data science and analytics projects are defined by their business impact (Dhanrajani, 2015). The lack of business impact will directly relate to the success of an organization's strategic goals and attaining desired financial outcomes.

Communication is a key success factor in project success (PMI, 2013). Project failures are costly. Once a project fails, the investment made is lost, and work to determine failure and next steps incur additional cost. Project failure also results in the loss of time to market, which will add to the financial loss. Several failure points for data science and analytics projects studied by Demirkan and Dal (2014) have been outlined such as not addressing data quality, not clearly communicating a plan on analytics, and not seeing data science and analytics as a core capability requiring an ecosystem of technology, people, and process, to name a few. Most of the failure points align with lack of strategy and communication of strategy – which includes communication of the benefits of data science and analytics.

The significance of this research to leadership concludes that to increase the probability of business benefits from data science and analytics projects, additional attention needs to be focused on the project initiation and planning stages. Focusing on project selection and alignment, initial project evaluation, clear business objectives, and clear project goals can increase the likelihood of data science and analytics projects delivering business benefits. This is a clear gap, and closing this can improve data science and analytics project success.

This research identified the lack of focus on communication in data science and analytics projects; however, the root causes that contribute to this lack of focus was not in the scope of the research. Future research to be considered is to collect and analyze the contributing factors to this lack of focus on communication in data science and analytics projects. Other future research areas to consider are the use of agile methodology to improve collaboration and communication in data science and analytics projects as current research on agile methodology suggests potential improvements in project delivery and business benefits realization.

The findings of this research highlight the importance of communication to the success of data science and analytics projects. Failure to focus on communication in these projects has strategic impacts to the organization's competitive advantage and financial outcomes. The practices of aligning data science and analytical projects with organizational strategy, fully evaluating projects, defining clear business objectives and project goals are not being practiced based on the findings of this research. Data science and analytical projects may be new to some organizations; however, the communication practices used in project management can have benefits and should be adapted.

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Authentic Leadership and Machiavellianism in Young Global Leadership

AUTHOR: TAMÁS LANDESZ

Abstract

We are short of true global leaders. We live in a crucial moment in history in which true leadership will define whether we can meet critical social, political, economic, and environmental challenges. How we define leadership today may be more critical than ever. This study aims to contribute to authentic leadership research by examining the relationship between authentic leadership and Machiavellianism through the lens of the World Economic Forum's Young Global Leaders community. Young Global Leaders are at the forefront of their respective sectors, pioneering new solutions across boundaries. Their "crucible" moments (i.e., an experience that tests leaders to their limits) brought them success at an early age and shaped their own leadership thinking. The well-established ALQ (Authentic Leadership Questionnaire) and MACH IV (Machiavellianism questionnaire) self-assessment surveys were combined with semi-structured qualitative interviews. This study examines how Young Global Leaders combine authentic leadership with Machiavellianism and shares ideas on the future of leadership for next generation leaders.

Keywords: authentic leadership, ALQ, Machiavellianism, MACH IV, Young Global Leaders (YGLs), World Economic Forum (WEF)

"Leadership cannot be taught, but it can be learned" (Geenen, 2012).

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"It is not necessary to be born with specific characteristics or traits of a leader to be a leader" (George, Sims, McLean, & Mayer, 2007).

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"Discovering our authentic leadership capacity requires a commitment to developing ourselves" (George, 2003).

Introduction

We live in a crucial moment in history in which leadership will define whether we can meet critical social, political, economic, and environmental challenges. Leadership today may be more critical than ever in a globalized world, where the pace of change is accelerating constantly and where complex systems surround us.

Because global leadership is more important today than at any other time in human history, a comprehensive understanding of global leadership is warranted. Leadership has always been difficult in challenging times, but today's challenges "call for a renewed focus on what constitutes genuine leadership" (Avolio & Gardner, 2005, p. 316). At events such as the Annual Meetings of the World Economic Forum in Davos, Switzerland, the global elite have demanded a new covenant to restore trust, confidence, and meaning for all stakeholders, in addition to fostering more mindful and positive self-awareness. As former head of Medtronic Bill George eloquently stated, "We need leaders who lead with purpose, values, and integrity; leaders who build enduring organizations, motivate their employees to provide superior customer service, and create long-term value for shareholders" (2003, p. 9). A suitable construct that best represents the positive forms of leadership needed in today's dynamic world is "authentic leadership development" (Avolio & Gardner, 2005). Authentic leadership has been gradually gaining ground among scholars (Luthans & Avolio, 2003; Seligman, 2002; Terry, 1993) and practitioners (George, 2003) alike. Emerging literature in this area explains how authentic leadership and its development can relate to meaningful sustainable performance (Avolio & Gardner, 2005, p. 334).

Bill George, in cooperation with Harvard Kennedy School of Government, established a two-week long leadership program titled "Leadership for the 21st Century" for members of the World Economic Forum's Young Global Leaders community in order to promote authentic leadership values in a new generation of global leaders. George (2003) defines authentic leaders as follows:

Authentic Leaders are "good in their skin," so good they don't feel a need to impress or please others. They not only inspire those around them, they bring people together around a shared purpose and a common set of values and motivate them to create value for everyone involved. (p. 52)

Young Global Leaders (YGLs) are at the forefront of their respective sectors, pioneering new solutions across gender, ethnic, political, geographical, and industry boundaries. Their "crucible moments" are what brought them success at an early age and shaped their own leadership thinking. This study examines how they combine authentic leadership values with Machiavellianism, maps their leadership DNA, provides directions for next generation leaders, and provides recommendations for future research.

This study seeks to contribute to the leadership literature by investigating and analyzing the relationship between authentic leadership and Machiavellianism in high performance leaders through the study of the rigorously selected YGL community of the World Economic Forum (WEF). The two self-assessment surveys administered for this study, complemented by semi-structured interviews, represent the first systematic research conducted on the YGL community.

Increasing Complexity of Leadership Construct

The interest in leadership and leaders has increased steadily since the end of the twentieth century. Building on Max Weber's construct of charismatic authority (1915), the leadership literature has greatly expanded our knowledge on the relationship between leaders and followers. These theories look at the attributes and behaviors of unusual leaders in unusual situations, and the unique responses of their followers.

Authentic leadership theory distinguishes itself from other leadership theories although it is still in the early stages of construct development. There is indication that an authentic approach to leading is desirable and effective for advancing the human enterprise and achieving positive and enduring outcomes in organizations (George, Sims, McLean, & Mayer, 2007; George, 2003). Personal benefits of authenticity, as shown by mounting evidence from social, cognitive, and positive psychology as well as organizational studies, include more "optimal" levels of self-esteem, higher levels of psychological well-being, enhanced feelings of friendliness, and elevated performance (Grandey, Fiske, Mattila, Jansen, & Sideman, 2005; Kernis, 2003). When organizational leaders know and act upon their true values, beliefs, and strengths, while helping others to do the same, higher levels of employee well-being will accrue and positively impact follower performance (Ryan & Deci, 2001). According to Bill George, authentic leadership is derived from the leader's personal history, including "crucible" events in life, triggering the flow of leadership formation (George, 2003; George et al., 2007). Authentic leaders' self-identity, including moral development and ethical values, are formed through these triggers. Authentic leadership is based on a lifetime of experiences and trigger events, difficult to emulate in a traditional training program. Development of authentic leaders requires guided self-reflection, and building of self-awareness using a life-stories approach. As explained previously, crucible events are defined as experiences that test leaders to their limits. A crucible can be triggered by events such as confronting a difficult situation at work, receiving critical feedback, or losing your job. It may also result from a painful personal experience such as divorce, illness, or the death of a loved one (George & Sims, 2007, p. 46).

Authentic leadership is a theory related to positive psychology and includes ethical leadership and transformational leadership (Bass &

> **"Because global leadership is more important today than at any other time in human history, a comprehensive understanding of global leadership is warranted."**

Steidlmeir, 1999). Authentic leadership "focuses on the formation of authentic relationships between the leader and followers that are characterized by trust and integrity" (Gardner, Avolio, & Walumbwa, 2005, p.389). It is a growing field receiving increasing attention as more ethical and inspirational leaders are called for. Gardner et al. (2005, p. xxii) define authentic leadership "as a process that draws from both positive psychological capacities and a highly developed organizational context to foster greater self-awareness and self-regulated positive behaviors on the part of leaders and associates, producing positive self-development in each." These leaders are characterized by knowing what they believe in, displaying transparency and consistency with their values, employing ethical reasoning and actions, focusing on developing positive psychological states, and are widely known and respected for their integrity.

Authenticity as a concept can be traced at least back to ancient Greek times, as captured by their admonition to "be true to oneself" (Harter, 2002). Although the concept is not new, researchers have recently turned their increased attention towards authentic leadership within both the applied (Gardner & Schermerhorn, 2004; George, 2003; George & Sims, 2007; George et al., 2007; May, Chan, Hodges, & Avolio, 2003) and academic management literatures (Avolio, Gardner, Walumbwa, Luthans, & May, 2004; Avolio & Luthans, 2006; Avolio & Walumbwa, 2006; Gardner et al., 2005; Luthans & Avolio, 2003). As these and other authors (Ilies, Morgeson, & Nahrgang, 2005; Shamir & Eilam, 2005) suggest, being true to oneself is only one element of true authentic leadership.

A recent surge in high-exposure corporate scandals and an increased demand for transparency and public accountability have increased attention on authentic leadership. The public has been calling for more positive forms of leadership in institutions and organizations to restore confidence at all levels of leadership (Avolio & Luthans, 2006; Brown, Treviño, & Harrison, 2005; George, 2003; Lorenzi, 2004). In response to remarkable gaps in ethical judgment by highly visible leaders, the public is demanding greater accountability of organizational leaders (Dealy & Thomas, 2006). Corporate boards are being held more accountable (Aguilera, 2005); executives who fail to walk the talk can expect to lose the trust of followers (Simons, 2002).

More empirical research is required to draw further nuanced distinctions among different leadership theories. Leadership contingency theory (Morgan, 2007) suggests that leaders must adapt their styles and behaviors to be effective across different situations. Incorporating the needs of varying situations and different followers while remaining authentic and effective as a leader requires utmost expertise. Some authors (Heifetz, Grashow, & Linsky, 2009; Terry, 1993) suggest that we should get away from just looking at (temporarily) successful leaders. Most books on leadership are about authority figures, like CEOs, statesmen, warlords, for example, who were successful and who may suddenly no longer be successful. Much less is known about leadership carried out by those who are not in an authority position. Terry (1993) and George (2003) are practical

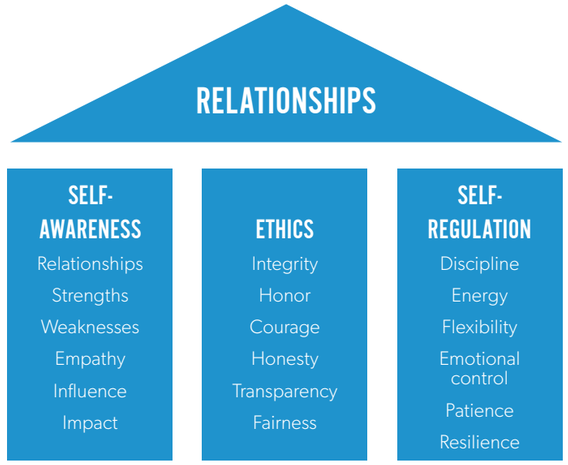
approaches to analyze leadership, and are not fully substantiated with solid research data. The moral component of authentic leadership is not fully explained by these authors. There is little evidence of how authentic leadership promotes positive business outcomes.

Can Leadership Be Learned?

There are 20 times more books on how to build revenue than there are to build leaders. "Authenticity" as a concept can be traced back to ancient Greek philosophers who stressed authenticity as being in control of one's own life. "Know thyself" is one of the Delphic maxims and was inscribed in the forecourt of the Temple of Apollo at Delphi, according to ancient travelogues. The concept of authentic leadership developed through the end of the twentieth century, but has recently garnered more attention through the involvement of Harvard professor and former Medtronic CEO Bill George (2003).

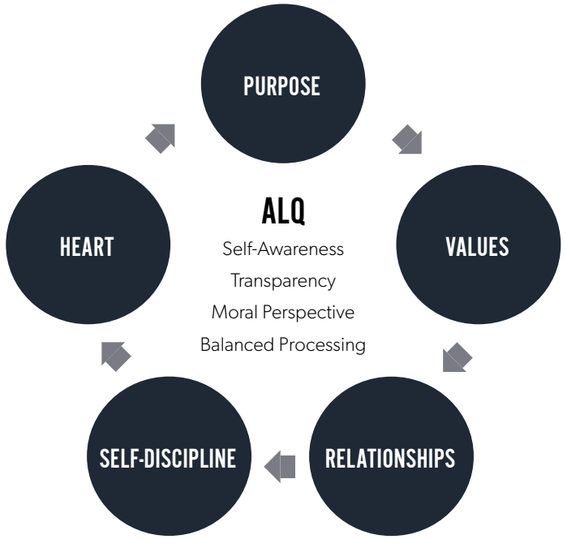
According to George and Sims (2007), authentic leadership is rooted in so-called trigger events (or crucible moments) from the leader's personal history. The self-identity of leaders, as well as their moral development and values, is influenced by these trigger events. Building relationships based on trust is the attribute that followers most seek in leaders (Beddoes-Jones, 2013). Authentic leaders should concentrate on the three pillars of self-awareness, ethics, and self-regulation to be effective (see Figure 1).

Figure 1. Three Pillars of Authentic Leadership. Adapted from "Authentic Leadership: The Key to Building Trust," by F. Beddoes-Jones, 2012,* People Management, *August, 44-47.



George's findings are very encouraging as he suggests that leaders do not have to be born with specific characteristics or traits, they do not need encouragement, and neither do they have to be in a position of authority. Instead, anyone can discover their leadership potential any time in their life. George et al. (2007) claim that authentic leaders need to sustain high levels of motivation and keep their lives in balance to understand what drives them, i.e., extrinsic and intrinsic motivators. Examples include growing as a person, helping other people develop, taking on social causes, and making a difference in the world. The key is to find a balance between one's desires for external validation and the intrinsic motivations that provide fulfillment in one's work. Again, as per George and Sims (2007), the self-identity of leaders, as well as their moral development and values, is influenced by these trigger events (see Figure 2).

Figure 2. Dimensions of authentic leadership. Adapted from Authentic Leadership: Rediscovering the Secrets of Creating Lasting Value, by B. George, 2003, San Francisco, CA: Jossey Bass.



Interest in measuring authentic leadership displayed by individual leaders has been surging in the past decade (Gardner, Cogliser, Davis, & Dickens, 2011; Henderson & Hoy, 1983; Kernis & Goldman, 2005, 2006; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008). Both research scientists and practitioners have been keen to understand leader behaviors within organizations, and the interaction of authentic leaders with their organizations. The Authentic Leadership Questionnaire (ALQ) was created by Walumbwa et al. (2008) to explore and validate the assumptions of authentic leadership. It is a 16-item instrument that measures four factors of authentic leadership: self-awareness, internalized moral perspective, balanced processing, and relational transparency.

Machiavellianism Rebooted

References to Machiavellian leadership can be found as much in the epic history of evolution as in the more recent history of humanity, even before the term was coined after Renaissance diplomat and writer Niccolo Machiavelli. In 1513, he wrote, "One ought to be both feared and loved, but as it is difficult for the two to go together, it is much safer to be feared than loved… Still a prince should make himself feared in such a way that if he does not gain love, he at any rate avoids hatred."

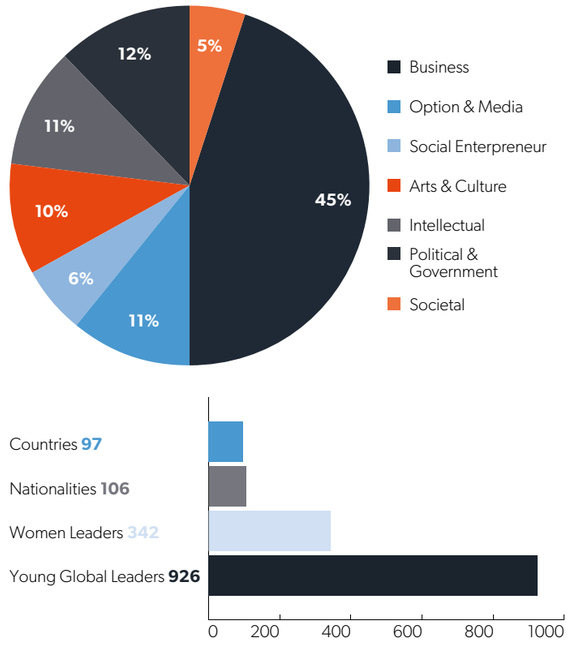
Despite some criticism, research on Machiavellianism has been largely supportive of the original formulation by Christie and Geis (1970). The efficacy of the MACH scales in predicting Machiavellian behavior is very impressive. The twenty-statement MACH IV test for measuring a person's level of Machiavellianism developed by Christie and Geis is now the standard self-assessment tool of Machiavellianism. MACH IV has been widely recommended for use in research (Fehr, Samsom, Paulhus, 1992). In a typical Machiavellian leadership orientation, a leader-follower relationship believes the ends justify the means. It does not matter how one achieves the goal as long as it is achieved (Williams, 2013).

Machiavelli's relevance today has not faded. His influence on modern leadership theory is evident. According to Galie and Bopst (2006, p. 235), "Machiavelli's teachings have never gone out of fashion; no doubt because power remains a central aspect of modern political and corporate life." His teachings seem as relevant today as they were a half-millennium ago.

Measuring Young Global Leaders

Each year, the World Economic Forum reviews thousands of nominations to find the most accomplished and inspiring young leaders to join the Forum of Young Global Leaders (see Figure 3). All of the nominations go through a rigorous selection process involving internal vetting, independent evaluation by Heidrick & Struggles, and final screening by a selection committee headed by Her Majesty Queen Rania Al Abdullah of the Hashemite Kingdom of Jordan. Candidates are selected based on their proven track record of professional accomplishments, breadth of their expertise, commitment to society, and their ability to overcome adversity, among other criteria.

Figure 3. Structure of the World Economic Forum's Young Global Leaders Community. Reprinted from "The Forum of Young Global Leaders: A Generation of Change," by World Economic Forum, 2014, Geneva, Swtizerland: World Economic Forum. Retrieved from http://www3.weforum.org/docs/WEF_YGL_Brochure.pdf.



Representing 106 different nationalities, Young Global Leaders (YGLs) are nominated to serve a six-year term. Candidates must be younger than 40 years old at the time of acceptance (meaning active YGLs are 46 and younger) and highly accomplished in their fields. Bruce Nussbaum (2008) described the YGLs as "the most exclusive private social network in the world," while the World Economic Forum itself describes the selected leaders as representing "the voice for the future and the hopes of the next generation."

The Forum of Young Global Leaders is a unique, multi-stakeholder community of around 1,000 exceptional young leaders who share a commitment to shaping the global future. Young Global Leaders represent the future of leadership, coming from all regions of the world and representing business, government, civil society, arts and culture, academia, media, as well as social entrepreneurs. Some of the best known YGLs are Facebook founder Mark Zuckerberg, actor Leonardo DiCaprio, news anchor Anderson Cooper, German Formula One champion Michael Schumacher, Wikipedia founder Jimmy Wales, Google founders Larry Page and Sergei Brin, and SpaceX founder Elon Musk. YGLs are at the forefront of their respective sectors, pioneering new solutions across gender, ethnic, political, geographical, and industry boundaries. Their crucible moments brought them success at an early age and shaped their own leadership thinking.

With a population size of almost 1,000, the target sample size was between 50 and 100 to achieve results with a confidence level of 95% and an acceptable margin of error of +/- 10% (Simon, 2006). The survey was administered to a random sample of 80 YGLs with a return rate of 64 (80%) completed surveys (of which 54 YGLs participated in the Harvard YGL Leadership Module during the past years, and 10 were new YGLs). Getting a high response rate (above 80%) from a small, random sample is considered preferable to a low response rate from a large sample. This study followed this principle by identifying a small representative sample of YGLs and obtaining a high response rate.

As shown in Table 1, subgroup I includes New Young Global Leaders with an average age of 35 and 10 years average work experience. The gender distribution of this subgroup is 60% male and 40% female, of whom 40% are Caucasian, 30% Asian, and 30% Hispanic or Latino. YGLs in this subgroup have a spread of between 0 to 25 thousand people reporting to them directly. Subgroup II includes Old Young Global Leaders with an average age of 39 and 15 years average work experience. The gender distribution of this subgroup is 50% male and 50% female, of whom 63% are Caucasian, 15% Arab, 9%

Table 1. Sample Population Subgroups I and II

Sample Populations	Gender (%)		Sector of Work (%)						Type of Responsibility (%)							Ethnicity (%)				
	Male	Female	Media	Government	Business	Non-Profit / NGOs	United Nations / IGOs	Academia	President / CEO / Founder	VP / Co-CEO / Co-Founder	Senior Director	Special Advisor	Author / Publisher	Filmmaker / Explorer	Professor	Caucasian	Asian	Arab	Hispanic / Latino	African
Subgroup I – New YGLs (n=10) Average age 35 10 years average professional experience, and a spread of 0 to 25 thousand people reporting to them	60	40	10	20	70	-	-	-	60	10	20	-	10	-	-	40	40	-	20	-
Subgroup II – Old YGLs (n=54) Average age 39 15 years average professional experience, and a spread of 0 to 43 thousand people reporting to them	52	48	6	6	69	13	4	4	59	15	13	4	4	4	2	63	9	13	11	4

Asian, 9% Hispanic or Latino, and 4% African. YGLs in this subgroup have a spread between 0 to 43 thousand people reporting to them directly. The gender distribution of subgroup I is closer to the gender distribution of the entire Young Global Leaders population, where the distribution of females is slightly below 40%, although the 2014 intake of new YGLs had a gender ratio in favor of females (51%).

Most YGLs have lived, studied, or worked in multiple countries, and see themselves as global citizens. Therefore, it is difficult to obtain useful information on their location, which is in continuous flux. The full YGL population comes from about 100 countries with over 100 different nationalities, making ethnic classification meaningless.

Figure 4. Industry Distribution of Population Sample Subgroups I and II

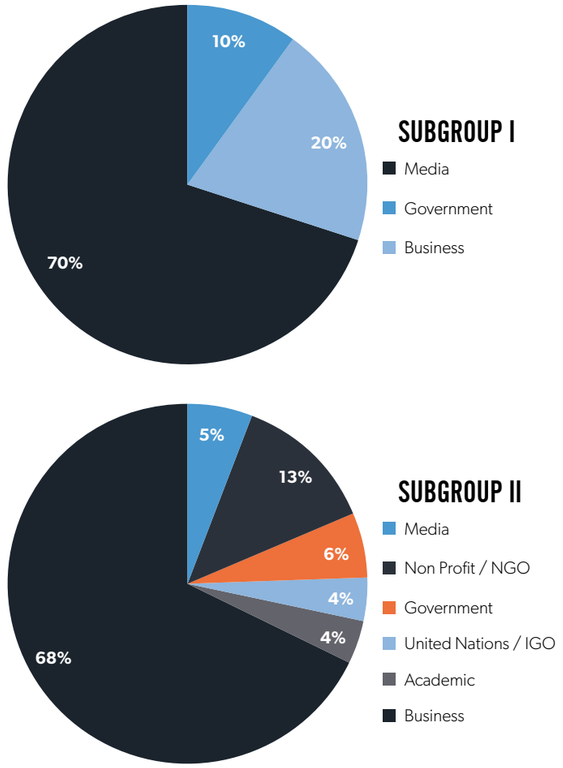


Figure 4 shows that the industry distribution among YGLs in both subgroups is similar, with about 70% in the private sector and 30% distributed between media, government, NGOs, IGOs, and academics. This is a reflection of the composition of active YGLs, as opposed to the full YGL community where business scores below 50%. Furthermore, Figure 5 illustrates that the leadership professions among both subgroups are similar as well, with about 70% of YGLs occupying the highest management positions (President / CEO / Founder or VP / Co-CEO / Co-Founder), 15%-20% in senior director or advisory positions (in NGOs, IGOs or Academics), and 10%-15% holding free professions, such as author, publisher, filmmaker, or explorer.

Survey Results

Table 2 provides a summary of YGLs' aggregated ALQ scores by scale. The highest ALQ score was recorded for the Ethical/Moral scale item ("make decisions based on my core values"), while the Self-Awareness scale item ("accurately describe how others view my capabilities") was rated the lowest.

Figure 5. Leadership Professions of Population Sample Subgroups I and II

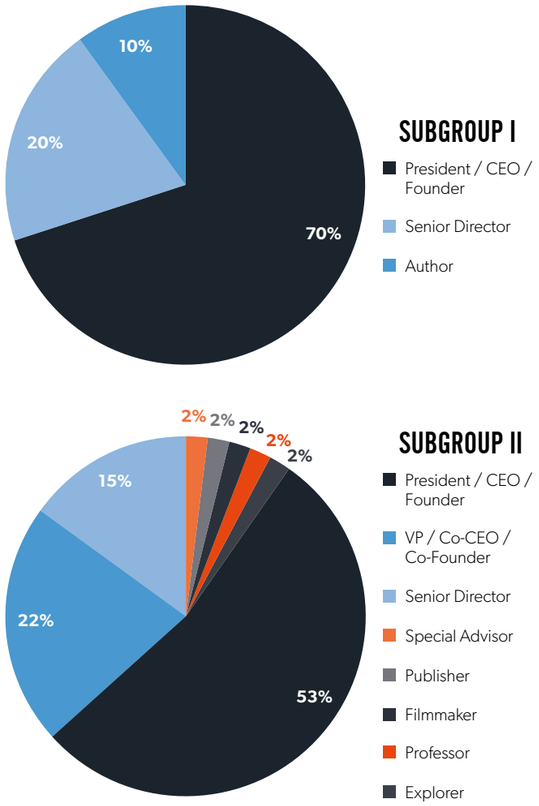


Table 3 provides a summary of YGLs' aggregated MACH IV scores categorized by scale. The research showed Cynical View as the strongest, and Manipulative Tactics as the weakest scale. Some items were positive while others were negative and should be inverted for appropriate meaning. The highest MACH IV score was recorded for the Disregard for Conventional Morality scale item -- "people suffering from incurable diseases should have the choice of being put painlessly to death". It should be noted that conventional morality has changed a great deal since the 1970s when the survey was originally designed. The lowest rated Machiavellian leadership item was the Disregard for Conventional Morality scale item -- "all in all, it is better to be humble and honest than to be important and dishonest." Given that this is a negatively scored item, it should be inverted for meaning (i.e., YGLs give high preference to being humble and honest, as opposed to being important and dishonest).

The quantitative surveys were complemented by semi-structured qualitative interviews, targeting 15 Young Global Leaders who participated in the Harvard YGL Leadership Module in 2013 (six from the USA, three from France, two from the UK, and one from Israel, Mexico, Sri Lanka, and Turkey respectively) to seek their views on the future of leadership, global leadership challenges, leadership in education, and their advice to future generations of leaders. The in-depth, open-ended interviews made use of an interview guide and were treated as conversations which generated detailed information and comments from the respondents. According to Patton (as cited in Rubin and Babbie, 2001, p. 407), "one way to provide more structure than in the completely unstructured, informal conversational interview, while maintaining a high degree of flexibility, is to use the interview

Table 2. YGLs' Aggregated ALQ Scores Categorized by ALQ Scale

ALQ Scales	ALQ Score	Items	Comments
Self-Awareness	3.06	Show I understand how specific actions impact others;	Four items among bottom eight scores
	2.89	Seek feedback to improve interactions with others;	
	2.84	Know when it is time to reevaluate my position on important issues;	
	2.53	Accurately describe how others view my capabilities.	
Transparency	3.63	Encourage everyone to speak their mind;	Three items among top eight; Two among bottom eight scores
	3.48	Say exactly what I mean;	
	3.45	Admit mistakes when they are made;	
	2.84	Tell others the hard truth;	
	2.61	Display emotions exactly in line with feelings.	
Ethical/ Moral	3.70	Make decisions based on my core values;	Four items among the top eight scores
	3.52	Demonstrate beliefs that are consistent with actions;	
	3.42	Make difficult decisions based on high standards of ethical conduct;	
	3.31	Ask others to take positions that support their core values.	
Balanced Processing	3.06	Listen carefully to different points of view before coming to conclusions;	One item among the top eight; Two among the bottom eight scores
	2.98	Analyze relevant data before coming to a decision;	
	2.73	Solicit views that challenge my deeply held positions.	

Table 3. YGLs' Aggregated MACH IV Scores Categorized by MACH IV Scale

MACH IV Scales	MACH IV Score	Items	Comments
Manipulative Tactics	3.05	There is no excuse for lying to someone else.	Four items among top ten scores; Five items among bottom ten scores
	2.94	It is possible to be good in all respects.	
	2.84	Anyone who completely trusts anyone else is asking for trouble.	
	2.73	It is wise to flatter important people.	
	2.52	When you ask someone to do something for you, it is best to give the real reason for wanting it rather than giving reasons which carry more weight.	
	2.58	Honesty is the best policy in all cases.	
	2.38	One should take action only when sure it is morally right.	
	2.28	The best way to handle people is to tell them what they want to hear.	
	2.05	Never tell anyone the real reason you did something unless it is useful to do so.	
Disregard for Conventional Morality	3.92	People suffering from incurable diseases should have the choice of being put painlessly to death	One item on top; One on bottom of the scores.
	1.45	All in all, it is better to be humble and honest than to be important and dishonest.	
Cynical View	3.50	Most people are brave.	Five items among top ten scores; Four items among bottom ten scores.
	3.50	Most people who get ahead in the world lead clean, moral lives.	
	3.02	P.T. Barnum was wrong when he said that there is a sucker born every minute.	
	2.95	It is hard to get ahead without cutting corners here and there.	
	2.61	It is safest to assume that all people have a vicious streak and it will come out when they are given a chance.	
	2.33	Most people are basically good and kind.	
	2.17	Generally speaking, people won't work hard unless they're forced to do so.	
	1.94	Most people forget more easily the death of their parents than the loss of their property.	
	1.81	The biggest difference between most criminals and other people is that the criminals are stupid enough to get caught.	

guide strategy." An interview guide was used in this study as it provided a point of reference to the fluidity of topics, how to pose the questions, and their sequence.

YGLs viewed the future of leadership as an emerging era of humanity and empathy, as we transition towards a more digital existence where the role of global institutions will be significantly redesigned.

- "Technology will become an enabler for people to use themselves more effectively, maximizing their potential . . . Reputation will be so much more important because everyone will be aware of it." (Interviewee No. 12)
- "Change requires leadership in complex systems." (Interviewee No. 15)
- "Using technology and science to connect us with nature, instead of thinking that we can control it." (Interviewee No. 3)
- "It's just a matter of time before we can 'download' ourselves fully into the digital domain and in doing so, pull the plug on our biological identities." (Interviewee No. 1)

The values and competencies viewed as increasingly important by YGLs in the future relate more to authenticity than to Machiavellianism, based on the indicators shown in Table 4. The majority of YGLs posit that a rapidly changing future will call for a new type of leadership to emerge. Table 4 shows these indicators in relation to the key terms, words, ideas, and themes identified in the interview transcripts based on a content analysis of the 18 interviews with YGL study participants. As shown in the table, authentic leadership indicators accounted for 82 citations, compared with 49 citations related to Machiavellian leadership. Accordingly, facets of authentic leadership were mentioned more frequently than were facets of Machiavellian leadership. The authentic leadership facet 'leading with heart' (with references to compassion, emotional intelligence and learning,

Table 4. Citations of Authentic and Machiavellian Leadership by YGLs

Indicators	Citation (n)	Respondents (n)
Authentic Leadership (caring)		
1. Purpose, drive, resolution, resolve, persistence, perseverance	3	2
2. Values, morals, ethics, ideals, principles, tenets, beliefs	14	10
3. Heart, compassion, emotion, sentiment, care, kindness	30	11
4. Relationship, connection, affiliation, bond, liaison, network	21	10
5. Self-discipline, self-control, willpower, restraint, moderation	14	8
TOTAL	**82**	
Machiavellian Leadership (controlling)		
1. Distrust, suspicion, disbelief, misgiving, doubt	1	1
2. Dishonest, deceitful, false, untruthful, corrupt, fraudulent	2	2
3. Manipulation, influence, use others	12	7
4. Cynicism, pessimism, sarcasm, skepticism	5	4
5. Self-absorbed, narcissist, egoistic, selfish, power, money	29	14
TOTAL	**49**	

care, education, and kindness), had the highest number of citations, followed closely by the Machiavellian leadership facet 'self-love, money, power, and competition'. The latter was also cited by the largest number of respondents (14 of 18), mainly referring to power (e.g., decentralized, computational, processing, human mind, and women powers), as well as to money.

The interview data were organized based on the coding structure shown in Figure 6. The data were organized under the following headings: future of leadership, global leadership challenges, leadership education, and advice to the next generation. The trend among YGLs appears to be to envision the world as a better place with more equality, opportunities and humanity, requiring lower levels of Machiavellianism and higher levels of authentic leadership in future generations. YGLs are supposed to be role models, instilling a new set of values in future generations of leaders. Table 5 summarizes YGLs' vision on the future of leadership and links them to the World Economic Forum's own vision.

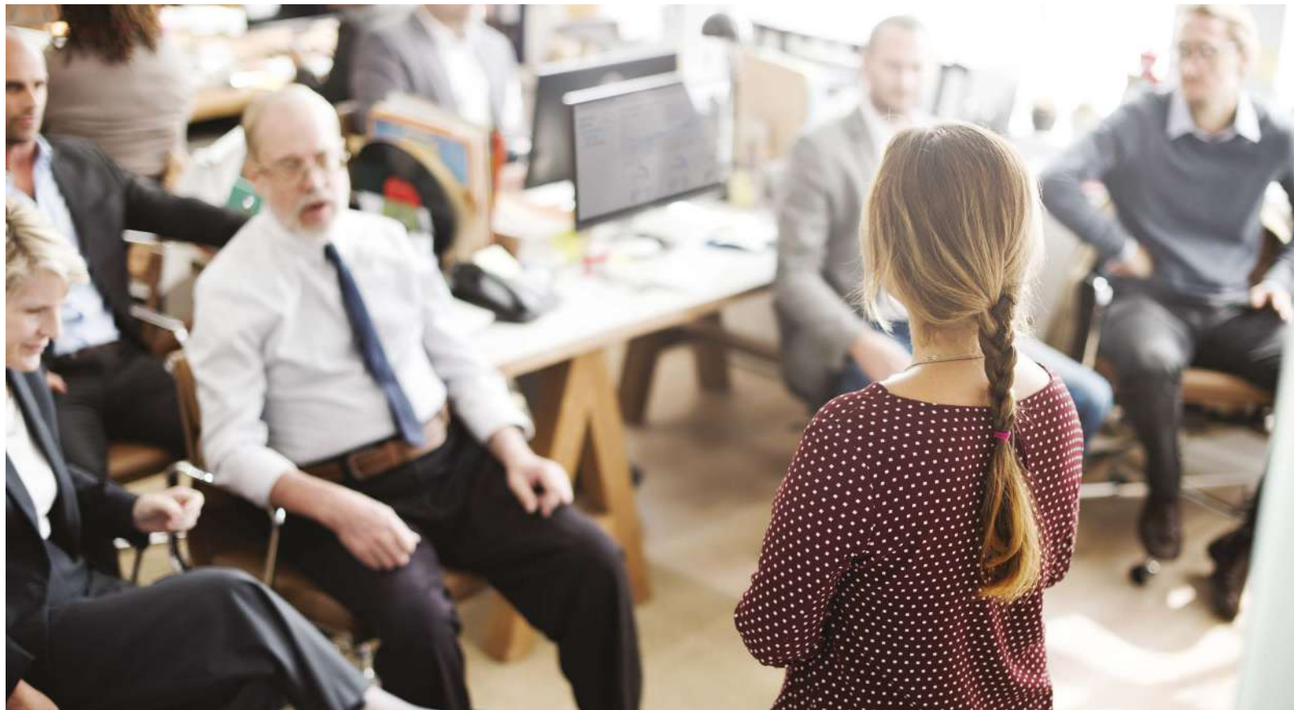


Figure 6. Semi-Structured Interviews Feedback Matrix

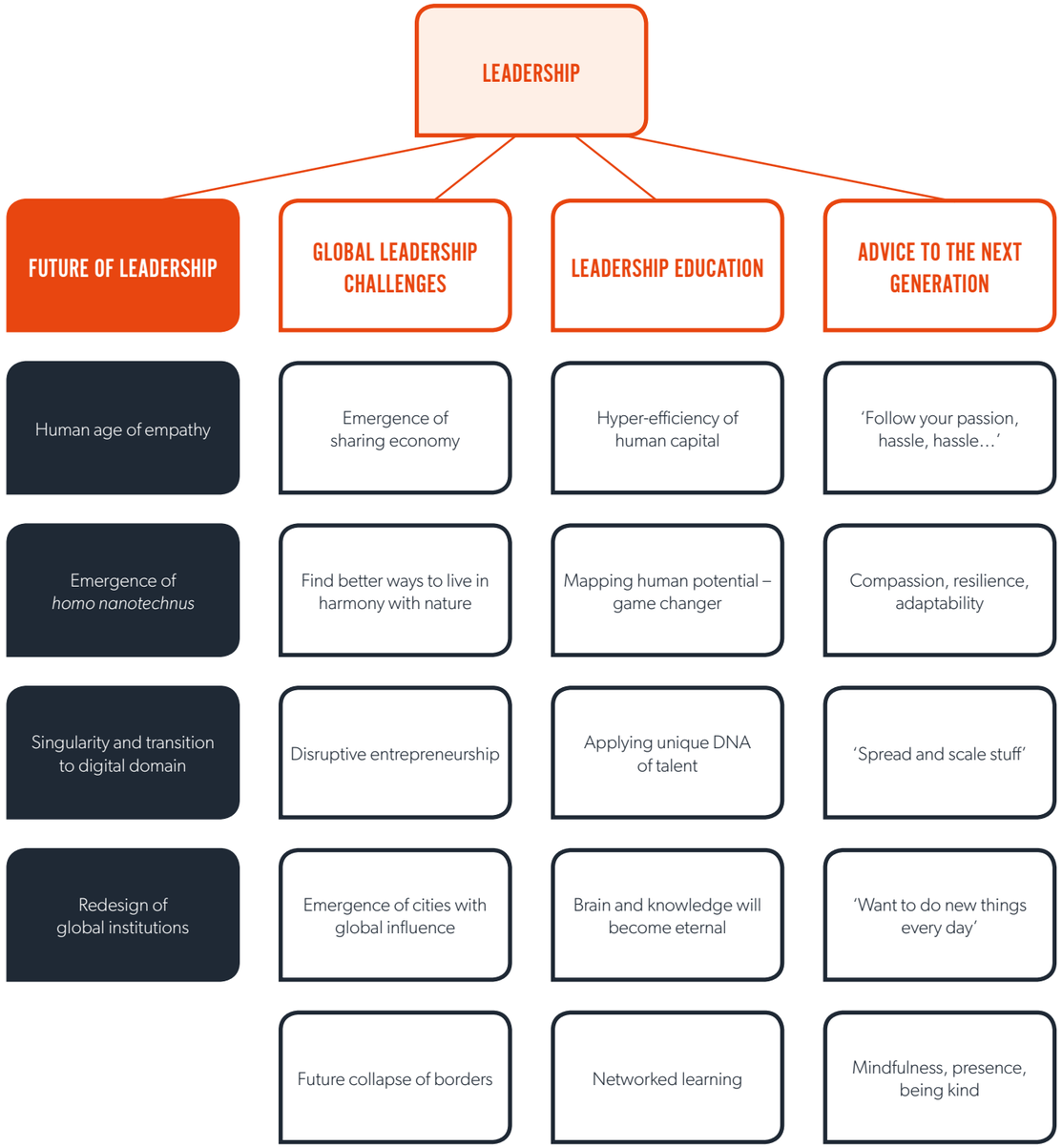


Table 5. YGL and WEF Visions on the Future of Leadership. Adapted from various sources on the official World Economic Forum website. Retrieved from www.weforum.org/agenda/archive/leadership.

Topics	Citation (n)	Respondents (n)
Future of Leadership	• Emerging era of humanity and empathy, as we transition towards a more digital existence where the role of global institutions will be significantly redesigned. • Values and competencies regarded increasingly important relate more to authenticity than to Machiavellianism	• A rapidly changing future will call for a new type of leadership to emerge. • Main theme of WEF Davos meeting in 2016 was the onset of the 'Fourth Industrial Revolution'
Global Leadership Challenges	• Emerging conscious capitalism. • Stronger sharing economy. • Thriving to find better ways to live in harmony with nature. • Disruptive industries and entrepreneurship. • Emergence of cities with global influence. • Future collapse of national borders.	• Big cities have more in common than nation states. • A new governance model could arise, giving the largest 40 cities more power, and citizens being able to vote instantly on major issues affecting their cities.
Leadership Education	• Hyper-efficiency of human capital. • Mapping human potential will be a game changer with every person able to apply their unique DNA of talent.	• Our brains and knowledge could become eternal through networked learning.
Advice to the Next Generation	• Follow your passion - exercise compassion, resilience and adaptability. • Spread and scale stuff. • Do new things every day. • Practice mindfulness, presence, and being kind.	• WEF supports YGLs and other communities of New Champions to place a major emphasis on authentic leadership values over Machiavellianism.

At the Summer Davos meetings of New Champions organized by the World Economic Forum on a regular basis, YGLs engaged in workshops and panel discussions on the topic of leadership and ideal leadership styles for the future. Table 6 summarizes the trends in emerging leadership styles according to YGLs as interviewed by the author at these meetings.

Table 6. Current and Emerging Leadership Styles According to YGLs

Current Context 'Old World'	Emerging Leadership Styles 'New World'
• Inundated by 'feel good leadership' literature that sounds good, but reinforces our belief in a just world fallacy, causing us to fail; • Employees claim that they want to receive negative feedback, but don't take it well when given; • Best practices based from latest research in cognitive and social sciences on how to influence and persuade others; • Transformation of top-down hierarchical organizations – how to lead in a period of transition? • People are longing for the 'New World', but are raised, educated and still very used to the 'Old World'	• Latest neuroscience research to integrate mindfulness strategies to enhance performance and resilience; • Evaluate engagement and behaviour change strategies in one's personal and professional lives; • Being aware of methods of manipulation, it is important for responsible leaders to remain ethical and use their talents for good; • Transition towards flat organic network organizations based on 'connected autonomy', providing new and gigantic opportunity to improve our ability to scale; • High performance and outstanding leadership by nurturing lifelong performance and resilience; • Protecting one's main asset: oneself

Limitations

Limitations imposed externally include the use of a convenience sample which means that the results may not be generalizable to the full population of almost 1,000 YGLs. Although authentic and Machiavellian leaderships are universal concepts, their practical use can depend to a large extent on the sector and situation to which they are applied.

The results of the study are mainly applicable to people with similar attributes as Young Global Leaders sampled in the survey:

1. under 40 years of age;
2. accomplished in their field compared with their global peers; and
3. share a commitment to shaping the global future.

Hypotheses and Findings

The analysis produced the following results:

Two Hypotheses were fully supported by the data

- **YGLs score high on authentic leadership compared to the norm.** The mean authentic leadership score of the YGL sample was considered high, above 3 (M0=3.13), as compared to the norm (M1=2.33).
- **Female YGLs scored higher on Machiavellianism compared with their male counterparts.** The mean MACH IV scores for female Young Global Leaders in both subgroups were below 60 (50.25 for female New YGLs; 52.92 for female Old YGLs), falling in the low Mach category. In aggregate, female YGLs recorded a MACH IV score of 52.53 compared with males who scored 50.52.

One Hypothesis was partially supported by the data (applicable to 80% of the population)

- **No significant relationship exists between Machiavellianism and high performance.** 80% of YGLs are low Machs (total scores below 60) and 17% of YGLs are considered mid Machs (total scores equal or above 60, and below 70), while 3% are high Machs (total scores equal or above 70). The mean value of the group is 53, falling in the low Mach zone. Semi-structured qualitative interviews with 18 YGLs consistently emphasized authentic leadership values over Machiavellianism.

Two Hypotheses were not supported by the data

- **YGLs score high on Machiavellianism compared to the norm.** The average Machiavellianism score of the YGL sample was considered low, below 60 (M0=52.56), as compared to the norms (M1=90.12 and M2=65.93).
- **The YGL Program has a positive impact on authenticity measured by an increase in ALQ scores from New to Old YGLs.** The average ALQ score of the two Young Global Leader subgroups was almost identical (3.14 for New YGLs and 3.13 for Old YGLs). No direct effect of the Young Leadership Program on the ALQ scores of YGLs could be demonstrated.

Discussion of Findings

Do the six-year long YGL program in general and the Harvard YGL module in particular have any effect on the authentic leadership (ALQ) and/or Machiavellianism (MACH IV) scores of YGLs? No increase in ALQ scores and only a minor decrease in Machiavellianism could be detected.

Nevertheless, the World Economic Forum offers various leadership development opportunities for YGLs, including executive education programs in leading universities around the globe, such as Harvard Kennedy School, Yale Jackson Institute for Global Affairs, and the Lee Kwan Yew School of Public Policy in Singapore. The YGL community gives its members a peer network that challenges them to be better leaders in both their personal and professional lives. It is a support system that questions, and constantly pushes its members to not only do more, but to be more too. YGLs are encouraged by the WEF to collaborate, learn, and act. As part of outreach initiatives, learning journeys, and community projects around the world, YGLs intend to lead by example and help less fortunate groups to develop and realize their full potential.

The Leadership Circles established during the Harvard YGL module by Bill George have been used to share personal stories and intimate crucible moments. The circles continued to meet well after the two-week long module, acting as leadership support groups, creating new connections, and strengthening the YGL community. Learning from each other's stories and assisting fellow YGLs to get through difficult personal or professional moments are major strengths of the community.

The concept of leadership is changing in response to the unpredictable demands of a complex world. As a result, analyzing and understanding an individual's unique DNA of talent and applying it much more effectively and efficiently will become increasingly crucial in the future. Addressing new challenges will require a new type of leadership to emerge. The Young Global Leaders community of the World Economic Forum has an important role to play as the catalyst and inspiration for next generation leaders ready to join efforts to improve the state of the world.

The majority of YGLs (67%) were mapped in the "authentic" leader's quadrant. YGLs achieved the highest ALQ scores in transparency ("encourage everyone to speak their mind") and ethical/moral ("make decisions based on my core values") scales. YGLs scored lowest in the self-awareness scale ("show I understand how specific actions impact others"). This study contributed to proving the construct validity of both the ALQ and MACH IV scales. It also established a correlation between the ALQ and MACH IV scales, concluding that there is a significant negative correlation (r = -0.2649), i.e., higher ALQ scores have lower associated MACH IV scores. Female YGLs show an even more significant negative correlation between ALQ and MACH IV scores (r = -0.5251).

Figure 7. Regression analysis of YGLs' ALQ and MACH IV Scores

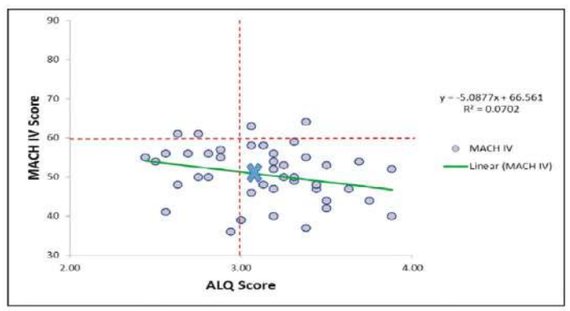
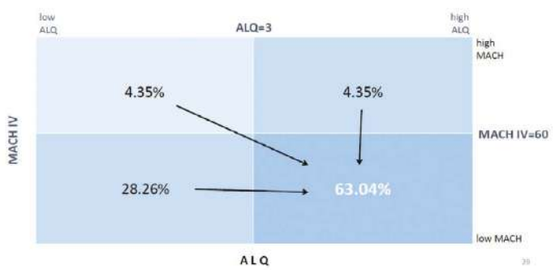
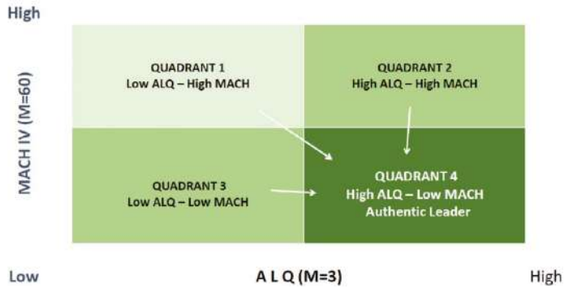


Figure 8. YGLs' Authentic Leadership Matrix



These findings are significant for academia, industry practitioners, corporate and public leaders, HR professionals, and students at an early stage of their careers, interested in authentic leadership development, career planning, training, and survey design. This study augments our understanding of the MACH IV and ALQ scores associated with the leadership roles of Young Global Leaders. The findings confirm that a combination of low Mach – high ALQ scores are ideal for new age leaders who are able to lead change in complex organizations, easily adapting to the new realities and promoting a caring style of leadership.

Figure 9. YGLs' Authentic Leadership Quadrant

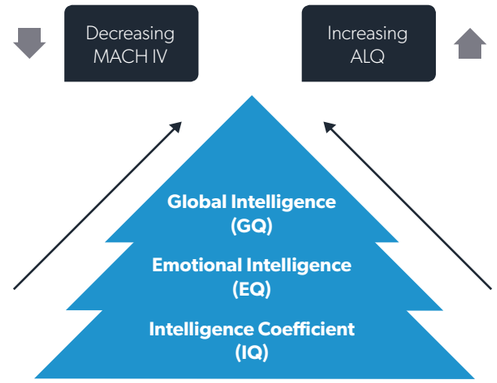


Future research could look into the mix of MACH IV and ALQ scores ideal in different industry settings, cultural environments, contexts, or stages of organizational development. For instance, high tech startups and well-established complex companies may require leaders with a different MACH IV–ALQ mix. The research on authentic leadership is still in the early stages of development, both in terms of its conceptualization and measurement. Over the last ten years discussion has progressed to allow us to reliably describe the attributes of an authentic leader. However, overemphasis on positive attributes, leaving aside negative attitudes and behaviors has always been a common bias.

Luthans and Avolio (2003, p. 243) defined authentic leadership "as a process that draws from both positive psychological capacities and a highly developed organizational context, which results in both greater self-awareness and self-regulated positive behaviors on the part of leaders and associates, fostering positive self-development." But not all scholars agree with this initial definition (e.g., Cooper, Scandura & Schriesheim, 2005; Sparrowe, 2005). As a result, alternative definitions have emerged, as well as a clearer differentiation between authentic leadership and authentic leadership development. For instance, Ilies, Morgeson, and Nahrgang (2005), drawing on Kernis' notion of authenticity (Kernis, 2003; Kernis & Goldman, 2005), offered a four-component model of authentic leadership, including self-awareness, unbiased processing, authentic behavior/acting, and authentic rational orientation. Gardner et al. (2005) posited a self-based model of authentic leader and follower development, suggesting several distinguishing features, including internalized regulation, balanced processing of information, authentic behavior, and relational transparency.

This study contributed to the academic literature on authentic leadership by testing the ALQ against the MACH IV. The ALQ is an increasingly accepted tool to assess authentic leadership. The same study could be carried out again in a few years to compare results, analyze changes, and identify trends in the YGL population. A related area for future research could be the development of an instrument that measures Global Intelligence (GQ), as defined by George (2007, p. 251-255).

Figure 10. YGLs' Authentic Leadership Pyramid



Conclusions

We are short of true global leaders. The Forum of Young Global Leaders (YGLs) is a community made up of the world's most outstanding next-generation leaders. Bold, brave, action-oriented, and entrepreneurial, these individuals commit both their time and talent to make the world a better place. Upon nomination, YGLs already have a proven record of extraordinary personal achievement. They also have two distinct features: they have achieved their success young – under the age of 40 – and have shown a commitment to making a positive impact on society. Their challenge is to increase their involvement in World Economic Forum collaboration initiatives by teaming up with other YGLs and influencing the post-2015 development agenda. In turn, this will allow them to make the most out of their YGL experience.

The world would be a different, more humane place if people were always authentic, modest, truthful, and consistently concerned about the welfare of others instead of pursuing their own aims. But that ideal world does not exist. Hence, what is the right mix of Machiavellianism and authenticity to make an impact on our increasingly complex world? The findings of this study provide some practical answers to this question. They provide insights and benefits to the World Economic Forum, the Forum of Young Global Leaders, individual YGLs, and aspiring next generation leaders on what is important and what works in developing the right mix of Machiavellianism and authentic leadership needed to build competitive, sustainable, and ethical workplaces and world communities of tomorrow.

The results have been offered to Klaus Schwab, Founder and Chairman of the World Economic Forum[1], contributing to the stocktaking exercise at the ten year anniversary of the Young Global Leaders community, helping to further enhance the YGL experience and its impact on the Forum's mission to improve the state of the world. The results will also serve as a measurable benchmark for future research conducted on the YGL community. They will provide feedback on the Harvard YGL Leadership Module hosted by Bill George as an effective authentic leadership development initiative. Finally, the study will provide insight into future directions of leadership research and practice to inspire future generations of leaders.

Just as brains become "smarter" as the number of neural networks and connections are increased, so too do organizations that connect more parts of their social system to each other and build a culture of shared leadership, achieve greater adaptability and collective capacity. Organizations should use their leadership development programs to help people understand that leadership is not contained in job roles but in the process that takes place across a network of people to continuously clarify "direction," establish "alignment," and garner "commitment" of stakeholders (Petrie, 2014). While leadership may

sometimes be enacted by an individual, increasingly it will be a process that happens at the group level, with various people's contributions influencing the collective. As these changes happen, the distinction between who is a leader and who is a follower becomes less clear or relevant; everyone will be both at different times.

In 2005, the first Young Global Leaders Annual Summit was held in Zermatt, Switzerland. There the first YGLs envisioned a new world in 2020 and were challenged to shake up traditional thinking on the major issues of our time. A decade later, the community accomplished a great deal, yet YGLs are now faced by a new global context that requires novel responses to the profound changes taking place. More than ever, world leaders are calling on the World Economic Forum to be a partner in understanding and shaping these global, industry and regional transformations, and founder Klaus Schwab wants YGLs to again re-imagine and shape the global context.

Geneva has a long tradition of bringing the world together to shape peace and international collaboration and is therefore an ideal location for the YGL Community to discuss how to collectively accelerate their joint efforts to improve the state of the world. YGLs are now working on aligning their impact initiatives with the 2030 United Nations Strategic Development Goals (SDGs). They are working together to dramatically affect the lives of future generations and craft innovative responses to address global and regional challenges. The Young Global Leaders (YGL) community enables leaders to turn their personal successes into global significance through the scaling up of ideas that lead to impactful change.

Although the results of this study may not be generalizable, it is refreshing to see that the trend among YGLs appeared to be to envision the world as a better place with more equality, opportunities and humanity, requiring lower levels of Machiavellianism and higher levels of authentic leadership in future generations. YGLs are supposed to be role models, instilling a new set of values in future generations of leaders. George (2015, p. 255-256) posits that authentic global leaders of today recognize that Machiavellianism is not a central leadership trait of the future and that they must thrive to serve people equitably contributing to their societies. As the world is changing and becoming more Volatile, Uncertain, Chaotic, and Ambiguous (VUCA), global leaders must change as well to remain effective. Leaders need to move away from a Machiavellian (controlling) leadership approach to a more authentic (caring) leadership style in order to respond to a VUCA world.

[1] Enhancing leadership potential is an integral part of the World Economic Forum's mission to "improve the state of the world". Besides the community of Young Global Leaders, the World Economic Forum established other communities with high leadership potential, e.g., Global Shapers, Agenda Councils, Global Leadership Fellows.

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WHAT HOLDS WOMEN BACK FROM BECOMING TRANSFORMATIONAL LEADERS? AN EXPLORATION OF FACTORS FOUND IN THE KENYAN ENVIRONMENT

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Abstract

This paper addresses the impediments faced by women in leadership in Kenya in 2006-2016 as they become transformational leaders. The theoretical perspective is based on the transformational leadership theory. It seeks to understand the barriers that female leaders faced when becoming transformational leaders in the Kenyan organizational environment. This paper is developed from a discussion of a committee of subject matter experts' perceptions and experiences as they discussed the key barriers that female leaders faced.

Keywords: leadership, women in leadership; transformational leadership; barriers; impediments; factors, internal factors; socio-cultural context; bias and stereotypes.

Introduction

The global debate on women began in the 1900s around International Women's Day (IWD), an annual March 8th celebration of the social, economic, cultural and political achievements of women. The day also marks an urgent call to action for accelerating gender parity.

Globally over the last twenty years, women earned 30% of the MBA degrees awarded in the United States of America. At the same time, they made up only 2% of Fortune 500 CEOs and 8% of top leadership positions (Blount, 2017; Lopez & Gonzalez-Barrera, 2014). In Kenya, in 2017, the Kenya Institute of Management (KIM) report showed that 12% of directors in 51 publicly-listed companies were female (Njihia, 2017).

In Kenya, as in many other parts of the world, the number of women in the labor force is higher than that of their male counterparts (Kenya National Bureau of Statistics, 2009). Paradoxically, there are fewer women in leadership than men (Kirai, 2013). This means that the growth of competent professional women into senior and board leadership roles is still affected by a multiplicity of influencers. Eagly and Carli (2007) described a labyrinth of leadership where women were blocked by invisible walls that prevented their growth. The central aim of this research is unearthing what accounts for this situation. The findings of this study enable women to gain a deeper appreciation of the influencers and to identify effective action to level the playing field in corporate Kenya

Literature Review

A review of the literature on leadership and gender was conducted to develop a conceptual and theoretical framework for the design and analysis of this research. The use of process analysis enabled the key themes from the data findings to be identified. For decades, researchers have sought to understand why women holding senior leadership positions is a rare occurrence and why many fail to grow and excel in that role and beyond. Previous research, such as that done by Dalton and Dalton (2010), focused on factors and strategies that can increase board leadership and presence of women in the executive suite. Ryan, Haslam, Hersby, and Bongiorno (2011) cited the issues around identity and role stereotypes.

In terms of global progress, research conducted by the World Economic Forum (WEF) to assess the gender parity gap showed significant progress in closing the gap in Sweden, Norway, Finland, Iceland and New Zealand (2015). Notable, and perhaps surprising, absent in the top ten rankings were the USA, the United Kingdom, and Australia. According to the WEF report, globally, no country has attained full gender parity.

Only a small percentage of women advance to senior management positions in public and private sectors (Bullough, 2008). According to Begum, Ja, and Khan (2013), most developing countries are patriarchal in nature, and this order of society was originally viewed to have been designed to keep women in a subordinate place. In Rwanda, which has the highest female parliamentary representation in Africa, Ryan & Haslam (2005) noted that, despite their high representation in government and public-sector participation, women continued to experience difficulties in influencing policy and having impactful power in this previously male dominated environment due to the glass cliff phenomenon (Ryan & Haslam, 2005). These difficulties are indicators of the complex realities of women's work in a traditionally male-oriented workplace.

Various studies have been conducted to determine what prevents women from attaining and excelling in executive-level leadership positions. Koenig, Eagly, Mitchell, and Ristikari (2011) argued that leadership was viewed primarily as a masculine role, and, as such, this perspective framed women professionals as being incapable of leading on the basic premise that they were not men. This was because the parameters used to assess them were masculine in perspective and practice. The authors also noted that women may not be aspiring to these roles because they are not aware that leadership positions are currently open to them. Furthermore, female executives may be discouraged by superiors as well as family members from pursuing these roles. These high potential women may not be viewed as such because as they were omitted from the talent succession pool.

Outdated and persistent factors have been linked to blocking the proactive growth of women into leadership. As a result, the growth of women in leadership has been an area of interest, bias, and research the world over. Kollewe (2015) demonstrated that women do not receive equal pay. This shows that women constantly perceive that they are underpaid for similar roles, and facts show that they are to a large extent. However, further research shows that women have low representation in leadership positions partially due to negative stereotypes (Heilman & Eagly, 2008), as well as resulting expectations and practices. Rudman and Glick (2001) argued in their study of Argentinian women managers that it is critical to explore how far Western perspectives are applicable in emerging economies.

A broad review of literature has demonstrated that seven key factors in the Kenyan context can impede the growth of women in leadership. First are internal and individual factors involving personal attributes about the leader. Second are factors which are biological, followed by those related to the family of origin and the family created by the woman, which may include a husband and children. Fourth are factors regarding culture and the norms of society, and the fifth relate to stereotypes and biases which form negative attitudes. Last are the organizational structures including the team that the woman leads and the entity's policies and practices, and finally globalization factors.

Internal and Individual Attributes

Internal attributes and traits include leadership style, confidence levels, self-belief, educational level, leadership experiences, level of self-awareness, self-acceptance, self-efficacy, and self-mastery. Research on female leaders highlights a lack of fit between the traditionally known and accepted leadership behaviors of being authoritative, masculine, and dominant, and those behaviors that are typically seen as feminine such as being accommodating, nurturing, and assertive (Moran,1992). Curiously, when women are assessed as a group, their attitudes are assessed as being mostly positive. By contrast, when the assessment is done of a lone female leader who is excelling in a predominantly male role, it results in a negative assessment and a resulting penalty for success achieved by the female leader (Pieta & Dijksma, 2013). This negative assessment has been attributed to the conflict between competency and likeability, and is deemed to be a key drawback for many women leaders who then suffer the double bind of either being competent and unlikeable or likeable and incompetent (Rudman & Glick, 2001). As a result, the two key leadership qualities of being task-oriented as opposed to people-oriented are at cross purposes when it comes to the performance assessment of female leaders.

Biology

Another influencer is the biological factors which include the convergence of their biological and professional clocks which seem to be at odds with each other. This results in talented young women leaving the workplace due to the conflict between the fast-growing trajectories of motherhood roles which occur when the trajectory of their professional career is growing. This has led to high attrition rates and a talent challenge as cited by Hewlett (2007). The conflict between advancing their families or careers is a significant influencer of leadership growth. These findings are convergent with significant situations of women in Kenya.

The brain and the hormonal effect on leadership and decision-making make up the scientific impact on impediments. This is seen through the female fear experienced due to their genetic and biological nature. Cannon (1932) stated that the human response to unhealthy stress was known as fight-or-flight. Taylor (2006) proposed that the human female responses to this unhealthy stress or danger was not similar to the fight-or-flight and was likened to a pattern they called tend-and-befriend. Ultimately, their research showed that women create, maintain, and utilize social groups, particularly with other women, to manage stressful conditions, and, by doing so, they reduce and regulate their responses to stress.

Family

Family factors refer to the responsibilities and obligations that come with the role of daughter, wife, and mother. Africans by their nature tend to be communal, and the above roles merge into each other for women who are likely to bear the challenge of being the primary caregiver of elderly and sickly extended family members as cited by Hewlett, Luce, and West (2005). Albeit men shouldering more financial obligations and domestic responsibilities, Kenyan women continue to have the lion's share of domestic and family responsibilities. A lack or presence of spousal support (Heikkinen, Lämsä, & Hiillos, 2014) has its impact on the women's careers. This view is convergent with the Kenyan experience.

Culture and Society

Social cultural factors have continued to enforce unjustified practices, biases and stereotypes (Ridgeway & Correl, 2004). Research on cognitive biases shows people are more likely to notice and recall information that confirms their prior stereotypes than information that contradicts it. A common example in the workplace occurs when a single female professional gets married and begins a family. Employers may assume that she will now give her family responsibilities more priority than the job at hand. They remember the times she left early or worked from home as opposed to recalling the times she worked longer hours than usual and exceeded the work expectation. This view is convergent with workplace practices in Kenya. Hewlett et al. (2005) further argue that this vicious cycle continues when female attrition reinforces the belief that they have lesser commitment to their careers resulting in deeper gender inequalities.

The 2010 Constitution of the Republic of Kenya has catalyzed the socio-cultural effect and resulted in a radically positive effect on women by increasing prohibition of various forms of discrimination. An audit conducted by African Woman and Child Feature Service (2010) found the Kenyan Constitution to be significantly impactful in protecting women's rights and elevating the female contribution in Kenya. It has also provided an avenue to enable women to be represented in leadership roles.

Stereotypes and Biases

The fifth set of influencers are gender stereotypes and conscious and unconscious biases. When the female leader role is traditionally perceived to be a male role, she is deemed inconsistent with an effective leader's attributes, and negative preconceptions occur (Eagly & Sczesny, 2009). The team culture in many organizational settings is averse to women exercising extensive authority that involves the power to make decisions (Eagly & Karau, 2002). Conventional assumptions about the gender differences between men and women have been used as a fact rather than opinion. This has impeded women from taking leadership opportunities proactively and positively (Heilman, Wallen, Fuchs, & Tamkins, 2004). Masculine traits including assertiveness, decisiveness and strategic thinking have been and continue to be associated with good leadership.

Furthermore, some research shows feminine leaders as sensitive, thoughtful, empathetic, approachable, autonomous, and participative. Feminine leadership styles provide qualities such as being collaborative, inclusive, democratic and participative. Female

leadership styles are also credited with effectively managing, inspiring performance, and possessing high levels of cultural competence (Eagly, Karau, & Makhijani, 1995). These attitudes sometimes place labels on women leaders and have resulted in negative connotations. Diehl (2014) described benevolent and hostile sexism at the root of the trade-off between competence and likeability. Benevolent sexism is a subjectively favorable, chivalrous ideology that offers protection and affection to women based on the premise that they are weaker and need the support. Hostile sexism was defined as antipathy towards women who challenge the status quo (Rudman & Glick, 2001). Other research shows feminine attributes that are more impactful than colder masculine approaches. Cuddy, Fiske, and Glick (2008) studied the effect of warmth and competence in decision making and the effect of pre-conceived notions on the leadership growth of women.

Organizational Structures

Organizational structures are the sixth set of influencers. Dahlerup (2013) suggested that holding leadership roles could be difficult for women because the schemas and standards that organizations hold of male leaders are different from those they apply in assessing the effectiveness of women leaders. Practices such as flexible work schedules, availability of mentors and sponsors, availability of leadership development programs and assignments, affordable and accessible child care at work have been topical issues.

Globalization

Global influencers include aspects such as the worldwide move to increase gender representation in board positions as driven by the United Nations Sustainability Development Goals (SDG), and other localized regulatory causes have increased the visibility of the impact of women in leadership. According to Hora (2014), it is urgent for talent development experts to identify and grow female leaders who can work effectively across organizational, demographic and geographic boundaries.

Methodology

This research was conducted using multi-case qualitative research (Yin, 2014) methodology. As Merriam (2009) argued, the qualitative case study is an ideal design for understanding and interpreting educational phenomena. A purposive sampling procedure was used to yield the most information about the phenomenon under study (Patton, 2002; Silverman, 2004; Silverman & Marvasti, 2008).

The main research questions were:

1. What factors were perceived to drive and cause these impediments in the Kenyan context?
2. Which of these factors are perceived to have the most significant and far-reaching impact on the impediments?

The selection of the members of the committee of experts was done using a purposive (Palys, 2008) case sampling approach to identify the most impactful transformational leaders. Regional and ethnic diversity as well as gender and sectoral diversity were key elements in the selection process. Kvale and Brinkmann (2009) described the qualitative research interview as detecting experiences from what is said and unsaid.

The interview process was focused on six seasoned leaders who had extensive leadership experience at executive and non-executive levels. The six were composed of four females and two males.

Findings

The analysis of data from the semi structured interviews with the committee of experts uncovered three key factors that were responsible for influencing the impediments. These experts were referred to as "visionaries" in this study due to their extensive leadership experience.

Three key insights that emerged were:

1. The most significant factor holding women back was the internal factors that created individual barriers.
2. The next most significant were family factors.
3. The third key barrier were socio-cultural factors.

The first factor cited by all the six visionary interviewees was the ability to be self-aware and to understand the factors that were influencing her positively or negatively. Visionary 01 (V01) who was a seasoned female board chairman believed that women's mistakes are more glaring because of their expectations of themselves. Internal factors and attitudinal drivers push women leaders to constantly aim to prove themselves. This results in them being extremely critical of themselves and of their team members. This behavior perpetuates the negative rhetoric that women do not grow, which is based on the fear of failure. Other interviewees provided some additional insight. V06, for example, faced double jeopardy; she said she could not change being Kenyan and being a female. She mused, "So, I had to work twice as hard to overcome this." V01 claimed that the lack of clear identity leads to self-destruction due to the lack of peace in the inner self; a feeling faced by female leaders in particular. For many females, material success brings in a breed of classism and showiness. As such, solutions to reduce this threat need to be consciously applied first in the home and personal environment before results are seen in the workplace.

With respect to the family factors, two male interviewees alluded to the family relationship as providing a foundation for a female leader's growth, especially for married females. Three female interviewees observed that unresolved tensions in the family were often transferred to the workplace, and, as a result, the female would adopt self-preservation techniques and subconsciously develop more masculine and inauthentic leadership behaviors. V03 added that women need to find ways to overcome family hurdles and challenges. More specifically, V05 attributes this to diminishing identity of males being providers, hunters and gatherers in the past, and how this identity is under scrutiny and at risk. This challenge increases male insecurity and fear of women taking over male-defined roles in the family. V03 argued that women should go against the grain to create a new culture. On another note, V04 cited insecurity in females on both sides of a socio-economic divide while V05 specifically said about changing female roles, "This challenge increases their insecurity and threat of women gaining momentum and taking over their male defined roles in the family and society too is a real threat." V06 commented that socially women hold themselves and each other to a higher standard. She convincingly said, "A mistake by her is a mistake by all of us. When a female leader fails, we have all failed by extension." She went on to explain from her own experience; when a woman failed, other women held her to a higher standard, personalized her mistake, and bore it as an entire gender stream. This had an adverse effect on her confidence level. V01 suggested that this high percentage of low expectation of support is a result of the physiological manner in which the brain is wired. It retains the memory of old hurts and failures and results in a lack of support for others. She added that, "Precedence has shown that society is ready to forgive a man who has failed and not a woman. This is because she is never given a chance, the failure is projected to be a part of her. This reflects badly on her and she does not see the failure as a lesson."

The third factor that the interviewees strongly argued was a key driver was the socio-cultural environment. In the Kenyan context, it was a cocktail of gender, ethnicity, professional bias, traditional norms and customs, age, and other issues. The socio-cultural dimension was responsible for the attitudes and other stereotypes that impeded Kenyan female leaders. VO3 felt that the socio-cultural and family factors create a strong interplay that results in the difficult challenges faced by women leaders. However, V06 stated that the individual woman leader still has to make a choice to overcome the external socio-cultural and family factors. In so doing, she can develop her ability to be a team player and team leader. This calls for her increased ability to apply transformational leadership in a situational manner based on the context, the type of followers, and the culture of the organization.

An in-depth analysis of the data attained from the visionary interviews showed one key theme emerging of overarching importance. They all believe the female leader has the ability to develop her abilities, competencies, and attitudes to overcome or deal with all the other multiple factors. They would agree with Yousafzai and McCormick (2014) in their positive assessment of Nobel laureate Malala who individually and courageously fought at the risk of losing her life, for the cause for education for children and women in Pakistan where the Taliban had banned education. It is the female leader who can succeed by strengthening her self-awareness and understanding her family, socio-cultural, and organizational contexts. Then, she can gain competences and knowledge on how to manage effectively as a transformational leader. As Gandhi said, "The only person one can change is oneself."

Recommendations for Future Research

Further research can be conducted using both quantitative and qualitative methodologies on a larger representative sample of women in leadership who have succeeded in both their personal and professional spheres and have had a transformational impact.

Another area for potential further research would be in unearthing the underlying meaning of the word 'ambition' and understanding the perceptions held by both men and women in leadership with respect to the meaning and application of ambition. Future research could be done to appreciate what is perceived to be positive ambition and what is seen as negative ambition when demonstrated by women in leadership. There was a notion from the qualitative phase of this study that proposed that when society begins to expect less from women and stop holding them to a higher standard that is when real progress will be made. When average women are allowed to lead just like average men are leading currently without the double bind then the leadership barriers will be minimized. At what point can this tipping point be achieved is an area of future research.

Another opportunity is to broaden the population sample that was composed of experts who are all Kenyan. Future work that entails other Africans would broaden the scope and provide an African perspective of the impediments faced by women in leadership.

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Corrections

In our last edition, on page 1, we wrote "PhD candidates Dara Miller and Joachim Bauer." It should have been "PhD candidate Dara Miller and Professor Joachim Bauer."

In the table on page 20, the fourth category (left side of the table) should be "Change Management," not a repeat of the second category "Customer Experience."

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