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Sentience

Gender inequality in Japan: analyzing preliminary findings from a US investment bank

Realism: the guiding star or a misleading light in international relations?

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EU Business School

“It takes something more than intelligence to act intelligently”

FYODOR DOSTOEVSKY

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FOREWORD

Little over one year ago we witnessed the arrival of widely available generative AI with the launch of Chat GPT by Open AI. By January 2023, the large language model chatbot had become the fastest-growing software application ever, with over 100 million users contributing to its continued learning and lending it center stage in public debate. Since then, a plethora of related software tools have been developed, launched and improved on as generative AI technology continues to march boldly on towards a future less certain than ever before in terms of human agency.

The rapid growth and widespread availability of generative AI in its now various shapes and forms have spread shockwaves throughout all sectors and provoked varying degrees of reaction. Businesses are incorporating generative AI tools within daily operations, in some places already at the expense of human jobs. Traditional educational institutions struggle to keep up pace and deliver on promises of future-proof graduate skillsets, where prompt engineering and nuanced understandings of generative AI's capabilities and limitations will be essential.

Sentience, a term first coined in the 17th Century to distinguish our ability to experience sensations from our ability to reason, has returned to the fore as a means of distinguishing humanity from robots. Where we had previously hurried to underline reason as what differentiates us from our evolutionary predecessors, our new reality brings with it a fresh perspective on what it means to feel. That said, there are some who proclaim that we are on the cusp of the first sentient AI systems, poised to advance onwards at a speed unmatchable by mere human efforts.

All of this considered, it is somewhat remarkable that so little mention is made of this groundbreaking technology in the collection of articles contained within the present issue. The papers contained herein focus on distinctly human concerns. In the first article, Pillai and Taylor explore qualitative insights from interview data from female Japanese employees working for a US investment bank, depicting a situation of gender inequality within a multinational company which impacts negatively on their career progression. In the second article, Mahagaonkar and Chakravartti explore international relations through the lens of realism, with human nature, power and interest at the centre of realist analysis. In the third article, Perelló uses the case of BTS to showcase what drives companies to partner with K-pop idol influencers, exploring the interplay of company strategy and the brand associations of consumers.

The following three articles concern consumer demand for corporate sustainability and measures of its effectiveness, particularly regarding the financial impact it might have on companies. Aynur Asadli explores the relationship between corporate sustainability practices and financial performance through different lenses, including those of the various stakeholders involved. This article sets the stage for Alain Berger's essay on Puma's use of environmental profit and loss, which seeks to attribute monetary value to the exploitation of the planet's natural services. Berger explores how by considering the real cost of their environmental impact, companies might contribute towards the development of further-reaching and more meaningful CSR activities in times when consumer demands continue to push the agenda. In line with the previous two

contributions, Beck presents the concept of the geoforensic passport as a means of guaranteeing appropriately-sourced, high quality gold, thus combatting some of the social stigma that has become associated with a material deeply embued in the human imaginary and value system.

Continuing with economic and financial analyses, Torrecilla considers three dimensions of human value for start-up founders, pitching them against the project's capital structure. However, he finds that investors appear to attribute greater value to the latter. Merlo's contribution discusses how the impact of extreme events on the stock market might be mitigated, proposing the value of the Choe Volatility Index in hedging and gauging market tail risk factors.

The last two contributions for this issue are from student contributors. Bachelors student, Manuela Pachecho Tavares Ferreira reviews the blue and red ocean business strategies, constructing an argument in favour of the purple ocean strategy through the use of several examples. MBA student, Yazmin Marie Castillo, analyzes the leadership styles of Doug McMillon and Donald Trump, concluding that the effectiveness of different styles is somewhat dependent on situational and organizational factors.

We stand at the brink of a new era. In the background, Generative AI is greatly assisting many human endeavours to advance knowledge and our understandings of reality. As in this edition, it is often still the elephant in the room. We continue to grapple with what it is, can and cannot do, and contemplate how best to maintain an ally and/or tame the beast. Sentience and emotional intelligence have become our distinguishing features: nuance, context, perspective, motivation, empathy, human capital and experience grounded in a planet with limited resource. To reflect and celebrate our continued being, the preoccupations that fill the pages of this journal are still very much of a human nature. It is up to the reader to consider the potential contributions that recent technological advance might make to these enquiries, and what longer-lasting impacts it might make.

I would like to express my gratitude to former Editor-in-Chief, Dr Josep M Altarriba, for entrusting the ONResearch journal to me as EU Business School's first Vice Dean for Research and Faculty Development. It has been an honour to participate in the collation of the present edition and in the drafting of the journal's future strategy.

Francesca Walls
Editor-in-Chief

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GENDER INEQUALITY IN JAPAN: ANALYZING PRELIMINARY FINDINGS FROM A US INVESTMENT BANK

Gratien David Pillai & Aaron Taylor

ABSTRACT: *Inequality occurs in every labor market, and in most nations, males expect to be paid more for producing the same work as females. This is a widely held belief in high, low context, and sophisticated cultures. This paper aims to determine the level of gender inequality at a Japanese subsidiary of a U.S. investment bank based in Japan. The research seeks to discover how women are seen and whether they are constrained in terms of equality and advancement. Semi-structured interviews are used to interpret qualitative data transcribed and categorized 23 female Japanese workers' comments. Inequality has been revealed. Despite having greater education and experience, women were seen negatively by male co-workers. The investigation also revealed a 'glass ceiling.' The study included 23 female interviews, not limiting generalization and transferability. Change in Multinational Enterprises (MNEs) should concentrate on increasing workplace equity and inclusion. MNEs might use dual-role women as role models. This study's conclusions benefit researchers, employers, and Japanese employees seeking jobs in U.S. investment banks.*

KEYWORDS: Gender inequality, Work-life balance, Banking, Japan

The phenomenon of inequality exists in the labor market of most countries (Quentin and Campling, 2017). In most of them, males appear to be paid more than women in the same job positions. This case is apparent across populations in high and low context cultures (Girón *et al.*, 2021) and developed economies (OECD, 2015). Even though countries have introduced the Equal Employment Opportunity legislation to ensure individuals are treated equally, discrimination still exists in the workplace, with Japan being a case in point. In 1985, the Equal Employment Opportunity Law Act was introduced in Japan to prevent discrimination. Family-friendly policies were also introduced to offer women maternity leave and allow time off to raise their children before returning to work (Nagase and Brinton, 2017). Despite attempts made by the Japanese government to promote women's economic activity, Japan ranks 110 out of 149 countries based on the World Economic Forum's 2018 Gender Gap Index (Ng *et al.*, 2021). The main reason for this low ranking is attributed to the gender pay gap. According to the Organization for Economic Cooperation and Development (OECD) (2018), Japan's gender pay gap was 24.5% and is the second-largest amongst OECD nations. Although income distribution in Japan is relatively equal compared to OECD countries, inequality in income has significantly increased (OECD, 2014). This could result in financial instability (Israel and Latsos, 2020), affecting the growth of the

economy and contributing to social conflict (OECD, 2014). Over the years, Japan has made slow progress toward reducing gender inequality. One of the reasons contributing to this is an increase in the number of women pursuing higher education (Gordon, 2017). This has led to organizations recruiting more female employees with degrees to work in advanced occupations of higher remuneration (Diamond, 2017). However, employers are only willing to invest in developing a woman's career if they can demonstrate that they prioritize work over family.

Previous studies on Gender Inequality have mainly focused on Japanese organizations. This study is focused on a Japanese subsidiary of a U.S. investment bank in Japan and primarily concentrated on capturing the experiences of female employees and identifying the impact it has had on their career progression. Our study addresses this literature gap as most studies focus on small and medium-sized enterprises (SMEs). The authors suggest that equality practices within the Multinational Enterprise (MNE) are ineffective, substandard, and demotivating. This is supported by the fact that employees have claimed that they are not encouraged to pursue a progression in their career due to the identified issues. According to this study's participants, these constitute the factors that influence gender inequality and include the difficulty of balancing work and personal or family life, the 'glass ceiling' approach applied by the organization, and the negative perceptions of women. Moreover, female employees are negatively treated and viewed as 'weak,' 'slow,' and 'indecisive,' and prefer to focus on efficiency and the quality of work produced as opposed to the number of hours spent at work (Lee *et al.*, 2021).

This research paper focuses on three research objectives derived from the conducted interviews. These are to identify to what extent gender inequality is evident in the Japanese subsidiary of the U.S. investment bank, identify the ways in which women are treated differently than men within the organization, and evaluate how those attitudes restrict women in terms of career progression. In order to achieve the analysis of the main topic, the role of culture's influence is considered, including the identified challenges within organizations and the corresponding legislation. Furthermore, the research methodology is followed by the analysis of the qualitative findings containing the reference to the concepts of 'work versus family,' 'the glass ceiling,' and 'negative perceptions of women.' The following sections project synthesis and comparison of previous literature reviews and the findings of this study, including a review of the theoretical and practical implications that could assist in future research on a relevant topic.

LITERATURE REVIEW

The Influence of Culture

The conservative and male-controlled culture in Japan is influenced by the values outlined by Confucian and Buddhist principles (Cho *et al.*, 2019). Japan was built based on these values, which have existed throughout its history. This has contributed to developing a traditional mindset concerning what constitutes the 'proper' roles of men and women in society and the workplace (Villa, 2019). During Japan's rapid modernization, this mindset was prominent and influenced the creation of a system that promoted a division of labor based on gender (Meyer-Ohle, 2021). This approach was identified as a critical factor contributing to the country's success and enforced the notion of men as the breadwinners and women as homemakers (Piotrowski *et al.*, 2018). Japan,

as a country, has struggled to step out of this belief as this is deeply ingrained within its culture. Confucian values have also influenced gender perceptions. Confucian ethics were introduced to women during the feudal system of the *Tokugawa* period through manuals called *jokunsho* (Khalil & Marouf, 2017). Women were instructed on how to live their lives through these moral guides, which were based on the virtues of justice, benevolence, wisdom, politeness, and fidelity (Ramesh, 2018).

Moreover, the *Onna Daigaku* (Great Learning for Women), one of the famous instructional manuals that spoke of 'five ailments,' downgraded women to an inferior position to men (Ambros, 2015). The home was considered the most proper place for a woman because they were able to play the role of a submissive wife and be a mother to a warrior (Villa, 2019). In Japanese society, motherhood focuses on a complete dedication to the child. Mothers have been conditioned by society to believe that they play a vital role in helping the child develop successful relationships with others (Thelen & Haukanes, 2016). This would depend on how she prepares the child to socialize during the first three years of life (Senzaki *et al.*, 2016). This belief reinforces the view that without the dedication and commitment of the mother, a child will not have the desired development (Villa, 2019). This approach and outcome can make mothers feel guilty about work encouraging them to choose motherhood as opposed to a career. Over time, the "good wife and a wise mother" ideology known as '*ryosai kenbo*' replaced the old Confucian roles (Kim *et al.*, 2020). In addition to being a homemaker who raised children and cared for in-laws, women were accepted to seek employment in the labor market to contribute to the country's economy and structure (Kodama *et al.*, 2018).

Even though the view on gender roles and women's rights have evolved and changed over the centuries, Japan, as a country, has continued to hold onto most of its traditional male-controlled attitudes and values. Until the late 19th century, a woman's contribution to society was measured in terms of providing domestic support to her husband and raising the next generation. In contrast, a man's contribution was associated with military service and being economically active (Piotrowski *et al.*, 2019). This further endorsed the gender-oriented roles of men and women within the society. In Japanese cultures, when it comes to marriage, age is a determinant factor (Zhao *et al.*, 2017). Specifically, Japanese women are under constant pressure to marry at a younger age. In a study conducted by Hatano and Sugimura (2017), it was found that based on educational background, the average age for women to marry was 23.7 years for junior high school graduates and 24.2 for senior high school, and 25.4 for university graduates. As the acceptable social age to have children is considered 40, women are under constant pressure to get married by the age of 30. Unmarried women over the age of 25 are referred to as 'Christmas cake' (Lei, 2017), signifying that Christmas cakes are unwanted after Christmas. In schools, Japanese girls are taught the importance of marriage and the role of being a mother from a younger age. Historically, women prioritizing their careers or education over marriage have faced persistent social stigma (Brinton and Oh, 2019).
In post-war Japanese societies, the concept of 'professional' housewife or '*Sengyo Shufu*' has been at the heart of many discussions in the literature. A housewife's role has been considered a lifelong career, a status equivalent to a white-collar husband (Hendry, 1993), and a symbol of post-war family life in Japan. The husband's status would portray a woman's worth in society, thus automatically giving him more power (Hendry, 2019). Nonetheless, the economic slowdown in the 1990s has witnessed Japanese culture undergoing a significant change. Japan has experienced a decline

in marriage rates, and divorce rates have risen (Raymo and Park, 2020). There has been a decline in the cohabitation of extended families, and an increasing number of younger men and women who are single continue to live with their parents (Sugimoto, 2020). As a result, the family system has undergone structural changes. The role of women toward family and work has also experienced changes and contributed to a shift in gender balance in the workplace (Sugimoto, 2020).

Challenges Within the Organization

OECD countries have gradually seen a decline in gender differences in labor force participation rates since the 1970s (Sato et al., 2019). Despite making significant progress towards equal employment opportunities, the gender difference in promotions to senior positions and wages still exists in most developed countries (Kamberidou, 2020). This gap is significantly larger in Japan (Kato and Kodama, 2017). As a result, women tend to seek employment in lower-paying occupations and industries (Dalton, 2017). Previous studies have revealed that differences in job assignment within an organization would have an impact on employees' career development (Sato et al., 2019). Job transfers or secondments allow employees to experience situations that they are not familiar with, which will help them learn new strategies and develop skills that will enable them to handle various situations (Saengchai et al., 2019). Employees who demonstrate that they have broader work experience tend to be more successful in their careers (Suutari et al., 2017). Gender difference is much more prevalent within developmental jobs. According to Abbott and Teti (2017), several studies have concluded that female workers have been deprived of accessing several important developmental jobs. Women's obstacles in the workplace also affect their development within their job roles. Lack of developmental opportunities and higher promotion thresholds are some reasons why fewer women are in senior management roles (Linehan, 2019). Statistical discrimination against women can help gain insight into differences in job assignments based on gender (Sato et al., 2019).

A study among bank employees in Japan (Komagawa, 2016) revealed that male employees were treated favorably and given roles that would allow them to acquire skills and knowledge that would help them gain promotion to higher positions. These roles also helped them network with professionals within the sector, which is essential for a successful career. Female employees are unlikely to be offered roles that will help them advance to managerial positions, leading to a delay in their promotion (Hemmert *et al.*, 2021). In a study on the gender difference in initial assignment and promotion, Peillex *et al.* (2019) proposed that criteria and policies differed for men and women. To move into higher-ranked positions, women were required to have higher qualifications and demonstrate greater skills and abilities in comparison to their male counterparts. Discrimination might occur since employers are not certain about employees' commitment to the job. Beliefs about employees' future behavior, for example, quitting, can influence an employer's decision to hire, promote, and train (Ng *et al.*, 2016). These beliefs are formed through previous experience, as many female employees have quit their jobs when they have children. Conditions in the workplace have not encouraged women to continue working after marriage and having children. Due to high turnover rates, women are treated differently in relation to recruitment, training, and promotion (Kachi *et al.*, 2020).

The 'M-curve' represents a trend in how women participate in the Japanese labor market. The peak years of participation in the labor market are between the ages of 20-24 and 35-50 as part-time employees. The slope in the graph illustrates marriage and childbearing years (Yamaguchi, 2017). This view is supported by a study conducted by Goldman Sachs in 2010, which found that around 70% of women in Japan left the labor market after they had their first child (Kan and Hertog, 2017). As a result, employers tend to recruit women into low-paid part-time jobs, where they can be easily substituted if they choose to distance themselves from the labor market. In this case, women experience a substantial loss in their salaries and have a slim chance of regular employment when they decide to re-join the workforce (Huang *et al.*, 2019). Females spend most of their time doing unpaid work at home, having fewer hours to undertake paid work. Therefore, the difference in work commitment between men and women might clarify why men tend to dominate senior management positions within Japanese organizations and contribute to a higher gender pay gap among high earners (Kemper *et al.*, 2019). Existing organizational and management structures within Japanese companies are another reason fewer women are in leadership roles (Hemmert *et al.*, 2019). Under the present system, workers are required to work for the organization for several years before they become eligible for a promotion to a management position, and for many employees, this may not even occur before their late 30s (Nemoto, 2016). Japanese organizational culture expects employees to be fully committed to the company, including the prioritization of the company's needs over personal and family lives and extending working hours (Kawase *et al.*, 2017). Adapting to this system can be challenging for women as they want to have children and start a family life, ultimately having to choose between a promotion or having children. Many succumb to societal expectations and pressures and leave the company to focus on life as a homemaker instead of career development in the workplace.

Women are also confronted with maternity harassment or '*matahara*' when they become pregnant; a common phenomenon in Japan for women to be fired from their jobs if they become pregnant, even though this practice is illegal (Grant, 2016). Pregnant women who do not quit their jobs are sometimes labeled as causing trouble for the company (Hernon, 2018). Even before becoming pregnant, women can experience maternity harassment. Precisely, in a previously conducted study, female employees working for a Japanese cosmetic company revealed that management had created a maternity schedule circulated within the organization and among employees, which warned that they would be punished if they exhibited selfish behavior (Hernon, 2018). Employees are under great pressure to conform to pregnancy and maternity orders, with a failure to do so resulting in the risk of losing their jobs.

Introduction of Legislation and Policies

Prior to the introduction of the Equal Employment Opportunity Law in 1986, women were often left out of lifelong employment; a benefit offered to Japanese employees. Instead, they were given the opportunity to undertake different career paths, such as receptionists, administrative assistants, etc. (Makoto *et al.*, 2018). The introduction of this act witnessed the rise in female admissions into colleges, larger organizations recruited increasing numbers of college-educated women, and a growing number of women moved into traditionally male-dominant jobs (Girón & Kazemikhasragh, 2021). However, the job separation rate and gender pay gap are still larger for women than men (Sato *et al.*, 2019). Previous studies had indicated that when women accessed

male-dominated jobs, the gender pay gap decreased (Yu, 2020). However, male employees earn much higher pay in comparison to their female counterparts within the same occupation (Broecke *et al.*, 2017). The current pay gap in Japan is 24.5% (OECD, 2018).

To help female employees continue their jobs and develop their careers after childbirth, the Japanese government introduced the Child Care Leave Act in 1992 (Brinton and Mun, 2015). Employers must grant childcare leave if an employee requests time off to care for the child. This would enable employees to take time off to raise the child and avoid leaving the company. This Act was further amended and legislated in 1995 and is known as the Child Care and Family Care Act (Kodate and Timonen, 2017). The latest amendment to the act in 2017 allowed women to extend childcare leave until the child reaches the age of two (Yamaguchi and Rand, 2019). Such policies will arguably help women to remain in employment with the same organization and will result in their lifetime earnings being greater in comparison to those who decide to leave their careers in order to raise children (Asakawa and Sasaki, 2020).

Extending childcare leave can affect a women's career development (Lee *et al.*, 2009). To encourage women to focus on their career development, the Japanese government introduced new legislation, the Promotion of Women's Participation and Advancement in the Workplace Act, enforced in 2016 (United Nations Entity for Gender Equality and the Empowerment of Women, 2019). However, previous studies have highlighted that female employees are less keen on promotions to managerial roles in comparison to their male counterparts (Suzuki and Avellaneda, 2017). Reduction in overtime work and introduction of flexible working hours encourage more female employees to apply for managerial positions (Takami, 2018). Discussions around working hours and leave have created the impression that women are not able to perform the required hours and need more time to care for their families (Wu and Zhou, 2020).

Despite the progress being made in legislation over the last 35 years, gender equality in the Japanese workplace remains an aspiration. Only one-third of female workers are in regular employment, and senior management roles are heavily restricted. Women in Japan have made considerable progress in both health and education. However, women continue to encounter barriers to career progression, and gender segregation in the workplace still exists (Ikeda, 2019). Environmental influences can be seen in Figure 1 below.

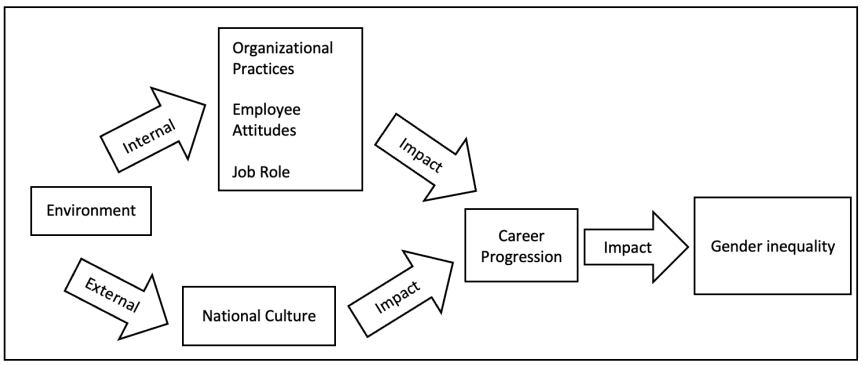

Figure 1: Environmental influence on gender inequality within an MNE in Japan

RESEARCH METHODOLOGY

The researchers decided to conduct the study at a U.S investment bank in Japan with an aim to point out the fact that even though the origin of the bank is under American ownership, the gender inequality gap is still evident and confirmed by the overall Japanese perception of females. In detail, the study helped in understanding that the treatment of employees, most likely, depends more on the attitudes of the country where the respective organization is based rather than on those of the country of origin. The participants were selected based on the number of years of their tenure in the bank. The researchers set a minimum of a 5-year tenure for the selection criteria of the subjects in order for them to be able to have a rounded perception and image of the matter of female treatment in their workplace. All 23 participants were females, which was the initial plan of the research team in order to serve the purpose of the study, to directly receive the necessary information related to gender inequality in the Japanese subsidiary of the particular U.S bank towards females.

An interpretive perspective was adopted using in-depth semi-structured interviews employed that focused on deriving rich and descriptive data (Bell *et al.*, 2018). This form of research is argued as more personal and subjective than quantitative methods such as questionnaires by allowing the interviewer the opportunity to probe or ask follow-up questions to the respondent to gain further breadth and depth of meaning and understanding of their respondents' views and experiences (Kallio *et al.*, 2016). Valid qualitative data will identify issues or obtain information on variables not found in existing quantitative surveys.

The primary interview questions aimed at gathering the necessary information regarding the duration of the participants' working experience in the particular company, their professional background, and the reasons behind their decision to work there. Further questions were asked in order to provide the researchers with insight regarding the topic. The researchers divided the interview material into four sets of questions based on subtopics. Precisely, the first set focused on the general idea of inequality, how participants perceive it as a term, and whether they could provide a relative example from within the company where inequality would be evident. The second set encouraged participants to demonstrate the ways in which women are perceived by men within the organization, provide a potential explanation behind their responses, and explain what could the company, according to them, do to solve this. The subtopic of the following group of interview questions was devoted to available career progression opportunities, with the last solid group providing room for further comments and explanations for the participants.

Moreover, the six key principles for ethical research have been honored. These include the respect for the rights and dignity of individuals and groups, the voluntary participation and the appropriate information process, the execution of the research with integrity and transparency, the definition of responsibility and accountability lines, and the independence of research that should be maintained and where conflicts of interest cannot be avoided, they should be made explicit (George, 2016). Qualitative data would help to better understand unexpected results from secondary quantitative data. As Opsal *et al.* (2016) contend, qualitative interviews are appropriate for fully understanding actual job settings. Convenience sampling was adopted as the respondents were all known to the interviewer. The collection of data took place from June to July 2020.

Twenty-three female Japanese employees from a Japanese subsidiary of a U.S. investment bank located in Tokyo agreed to participate in the research after contacting them by email. Initially, 30 employees agreed to be interviewed, although seven later withdrew or were unable to be contacted. This slightly limited the number of respondent data; however, the 23 respondents that fully participated in the research provided rich, in-depth levels of data, thus providing valuable insight into the research investigation. The basic demographics of those interviewed can be found in Table 1 below.

Code	Job Title	Tenure
Interviewee 1	Executive Secretary	6
Interviewee 2	Compliance Officer	6
Interviewee 3	Legal Analyst	8
Interviewee 4	Derivatives Associate	10
Interviewee 5	Analyst	8
Interviewee 6	Support Specialist	9
Interviewee 7	Credit Coordinator	7
Interviewee 8	Executive Secretary	5
Interviewee 9	Legal Analyst	8
Interviewee 10	Support Specialist	5
Interviewee 11	Analyst	7
Interviewee 12	Support Specialist	5
Interviewee 13	Executive Secretary	7
Interviewee 14	Legal Analyst	9
Interviewee 15	Credit Coordinator	10
Interviewee 16	Derivatives Associate	5
Interviewee 17	Support Specialist	9
Interviewee 18	Executive Secretary	10
Interviewee 19	Credit Coordinator	7
Interviewee 20	Derivatives Associate	9
Interviewee 21	Analyst	5
Interviewee 22	Legal Analyst	8
Interviewee 23	Executive Secretary	6

Table 1: Participants of the study

The purpose of the interview and its potential impact were clarified, why the respondents were selected, and approximately how long the interview would last. Any information which may bias the study was excluded, and the interviewees were able to ask questions at any stage. As King *et al.* (2018) argue, essential requirements facilitate open and productive interviews. Open-ended questions were employed to encourage a greater level of discussion and the usage of prompts to further develop the conversation. Nonetheless, it must be acknowledged that although interviews tend to be more resource-intensive and time consuming than other research methods (Young *et al.*, 2018), it is proposed that they offer the best way to discover the kind of rich, descriptive in-depth data that was necessary to confirm or refute the research questions. Although it can be contended that the usage of online interviewing, specifically Skype, is not the most effective form of interviewing due to the lack of proximity with respondents, it was deemed to be appropriate for this particular study due to its overall benefits concerning the distance and cost needed to visit

Japan (Seitz, 2016). Moreover, convenience sampling could be construed as a weakness with the potential bias problem due to the interviewer knowing the interviewees personally (Etikan, 2016). As Bell *et al.* (2018) elucidate, previous knowledge and experience in dealing with interviewees may result in an unwanted manipulation of the subsequent transcripts.

After all the interviews were completed, the resultant transcripts were coded and analyzed, and the subsequent data were evaluated and compared. Thematic qualitative analysis was employed to identify the most common themes. It was decided to focus on four themes to provide the most detailed findings possible (Kiger and Varpio, 2020). Specifically, a theme captures essential elements regarding the data and represents some level of patterned responses or meaning within the data set.

ANALYSIS OF FINDINGS

The research was conducted with twenty-three interviewees, and four key themes emerged from the data: the lack of work-life balance (WLB) for female employees, work being perceived as more important than family life, and the 'glass ceiling' (Pananond, 2016), and negative perceptions of female employees by male counterparts. These themes are critically discussed further and analyzed below.

Lack of Work-Life Balance

The research discovered that the organization does not consider the Work-Life Balance (WLB) important. As a result, shallow attention is paid to initiatives that enhance and encourage the WLB. For instance, remote working was not allowed in the organization, and everyone had to be working at their desk by 8.30 a.m. Interviewee A suggested that the lack of WLB was especially prevalent in investment banks. Interestingly, she had been seconded as a secretary to the U.S. in the past, and there was a noticeable difference in the lack of WLB in Japan compared to the U.S. She thought both men and women worked to a large extent extra unpaid overtime, and it was expected. In detail, the interviewee mentioned that the company doesn't pay attention to the number of working hours but to whether employees meet the targets and keep their clients satisfied. It was also pointed out that this appears to be usual in investment banks. Overall, employees feel they would be concerned about losing their job if they do not work hard enough. One of the interviewees stated that it is crucial to work hard in Japan, but when she worked in New York, she could go home at 6 p.m., but usually worked up to 8 or 9 p.m. in the Asian country. Similar statements were made by the rest of the interviewees, who all agreed that their WLB was insufficient for the remuneration they received, especially since they were paid considerably less compared to male counterparts who often had less experience, fewer skills, and qualifications. This situation led to resentment in many of the participants' cases, who stated it was *"really unfair"* and thought the organization was taking advantage of them. Despite the universal condemnation of these practices, which were all perceived to be unfair and unethical, it was noteworthy that no interviewees were planning on appealing or complaining about their working conditions. Each interviewee appeared to accept this situation for what it was and felt powerless to change the status quo.

The specific part of the interviews provided information regarding the difficulty for the targeted investment bank employees to create a balance between their professional and personal life outside work. The findings indicated that Japanese working females face considerable challenges regarding their working hours compared to the example of the United States provided. Additionally, they feel that not working for longer hours than men could also result in job loss. Wages were also declared insufficient for the amount and duration of duties carried out, providing significant evidence of gender inequality in the Japanese labor market.

Work versus Family

The second finding in the research confirmed that work was viewed as more important than family considerations. The concept of work was viewed as sacrosanct and should be prioritized before everything else, with those that work in the organization required to adhere to this principle. Although arguably controversial from a Western viewpoint, this perspective is common in Japanese working environments and was reluctantly accepted by each interviewee. Even though work was viewed as a more important component than family life and women were expected to work and take care of their families, they still received comparatively lower wages when employed in the same jobs as men. This issue has aroused stress and created disillusionment amongst female employees. For instance, interviewees have stated that they had been working at the company for eight years and received an extra 15,000 yen per month. Specifically, one of them gave an example of a man who started in the same job with her two years ago and was paid higher than her. The interviewee also stated that she had more experience than him and even helped him when he started. Furthermore, additional employees had similar experiences and were effectively usurped in terms of position and salary by, according to them, less-experienced and less-qualified male employees. Most interviewees characterized this situation as "really wrong" and *"highly demotivating and unfair."*

This part of the interview findings demonstrated the additional issue outlined by the participants, the dilemma of creating a family and ultimately having to choose to raise children over work. The interviewees supported that female employees in Japan go through a challenging time when their time comes to make that decision. Overall, it was claimed that women have a particular expectation to focus on giving birth to children and raising them instead of pursuing a successful and advancing career. This point dramatically supports the initial claim and purpose of this research, to address the matter of gender inequality in several contexts of Japan, including the social one.

The 'Glass Ceiling' Effect

It was discovered that women do not tend to get promoted or advance in the respective organization as male management was negatively influenced by their possibility of becoming pregnant and leaving at some point during their employment. Single women (i.e., without dependents) tended to be treated differently and fairer. These points were interesting and controversial revelations that displayed the impact of gender discrimination in the particular investment bank. Although each interviewee was disappointed with the situation, they accepted it as part of organizational

and national culture. In particular, it was stated by the female interviewed employees that they do not think they have a high chance of getting promoted to a senior position. They would like to gain more responsibility, but it appears impossible for women to get an executive-level job. In detail, many of them mentioned that they had attended promotional interviews several times, even though they would be rejected every time. This resulted in them giving up and accepting the situation as it is.

Likewise, some of the interviewees commented that they were, in fact, afraid to have children as they may not be able to return to their former job after maternity leave. Specifically, few participants mentioned that they wanted to be mothers but needed to work since the husband had an unstable income. They also provided examples of known female employees who lost their job after having children. More than half of the participants supported that, in their opinion, there is little chance of women being given senior management roles even though they have the ability to perfectly carry out the necessary tasks as efficiently as men and that this situation will most likely not change soon. Interviewees suggested that male executives were afraid to offer women more responsibility as it fought against Japanese societal norms.

It was revealed that women do not tend to be promoted or progress in the relevant company as male management was adversely impacted by their probability of getting pregnant and quitting their job. Single women without dependents tended to be treated differently and fairer. These points were noteworthy and contentious findings highlighted the effect of gender discrimination in the specific workplace.

Negative Perceptions of Women

The interviews further revealed that male colleagues perceived that women could not work for as extended hours as them. The interviewees believed this negative perception stemmed from Japanese societal norms and the "macho" culture of working at an investment bank. Several interviewees proposed that male staff members were proud of their ability to work extended hours, with many viewing this as a 'badge of honor.' Women were negatively compared to men in this regard and were viewed as unable to endure the same amount of stress and volume of work. For example, many interviewees stated that they sometimes feel there is a competition over who can work the longest and that it is common for men to think women don't work as hard because they don't work as long as men.

Furthermore, interviewees articulated that working for long shifts was expected of men but not necessarily for women. They thought this was not the most efficient usage of time and *"quality is better than quantity,"* especially in the organization. Interestingly, the interviewees agreed that the number of working hours was not effective in enhancing productivity. However, this was expected of male employees who did not question it. Nevertheless, they concurred that there was a negative perception of women and that they were seen as *"weak," "slow,"* and *"indecisive."* Interviewees believed the patriarchal nature of Japanese society had nurtured these perceptions and that women are not perceived in the same way as men thinking that they are not strong and always need the help of men, with this being a prevalent way of thinking in Japan.

Three interviewees also suggested numerous instances of direct gender discrimination with men, who were provided more opportunities to progress when compared with women. Expressly, it was stated that it was *"clear and obvious"* that men were promoted quicker compared to women and received higher remuneration, often for carrying out the same tasks. This situation made all interviewees feel *"depressed"* and reluctant to push themselves to do more than was necessary. Furthermore, one of the interviewees posited that if she were a man, she would have *"a much better job"* and felt discriminated against purely because of her gender. Finally, one of the participants affirmed that "*men always get more opportunities*" and provided the example of a male colleague in her department who started at the same time as her. He was promoted to senior analyst even though they started on the same date, five years ago, but now he is her line manager. The above affirmations retrieved from the participants support the initial hypothesis of this study regarding the unfair treatment and perceptions of females within Japanese society. As a result, women were perceived as unable to handle the same level of stress and workload as males. Overall, those interviewed believed that women are not seen as equal to men in Japan is a prevalent belief among interviewees who feel the patriarchal structure of Japanese culture has fostered these beliefs.

DISCUSSION

Drawing on the in-depth interviews above, we have enhanced our understanding of the experiences that female employees endure at the workplace, particularly within an MNE in Japan. MNEs that originate from the West tend to promote better standards of working conditions in countries they operate across the world, and most H.R. policies are designed in the corporate Head Quarters (Kodama *et al.*, 2018). Even though the standards and management practices vary across countries, they appear to be more progressive in comparison to local organizations (Barrera-Verdugo, 2021). However, the broader findings from this study provide new insights into what female employees experience within MNEs in Japan. This contrasts with the advanced standards of work MNEs promote within their operations worldwide (Kodama *et al.*, 2018).

Most local Japanese organizations do not promote flexible working practices and expect employees to work longer hours (Morris *et al.*, 2019). This has impacted women's ability to apply for promotions or continue employment (Takami, 2018) because of their dual role in society (e.g., being a mother and a breadwinner at the same time). Women working within MNEs also seem to have a similar experience as they are required to be at the office by 8:30 a.m. and are expected to work longer hours. Interestingly, one of the respondents mentioned that when she was seconded to the U.S., she had a better WLB and could finish work at 6 p.m. Even though it was the same organization, the working practices between the two countries were entirely different. Employees were expected to work beyond their contractual hours, and overtime remained unpaid. In essence, female employees were required to prioritize work over family life if they wanted to develop a career. Employers are also willing to invest in developing a woman's career if they can demonstrate that they prioritize work over their family life (Nagy, 2015). Single women without dependents tend to fare better in progressing their careers. Women who prioritized their careers over marriage had to deal with a persistent social stigma (Grant, 2016). Lack of developmental opportunities and higher promotion thresholds are some reasons why fewer women are in senior management roles

(Saitova and Di Mauro, 2021). Women are expected to get married and leave their jobs to raise a family, so they have been deprived of accessing developmental assignments (Kitada and Harada, 2019). This view has influenced female employees' decision to have children, as they are afraid they will not be able to return to the same job if they go on maternity leave (Mirza, 2016).

Female employees were paid considerably less in comparison to their male counterparts (Dalton, 2017). Male employees with fewer skills, experience, and qualifications had been promoted to higher positions (Sato *et al.*, 2019). This experience has caused considerable stress to female employees and negatively impacted their desire to develop their careers (Kobayashi and Kondo, 2019). Male managers were reluctant to provide female employees with greater responsibilities because they felt it was against Japanese societal norms (Baron, 2020). This has enabled female employees to demonstrate that they have broader work experience, as this is important to develop a successful career (Kobayashi and Kondo, 2019). Male employees working at the MNE were in competition over who could work for the longest. Employees were able to demonstrate their commitment to work by working longer hours, and this might clarify the reason why men tend to dominate senior management positions. This is another contributing factor to the gender pay gap in Japan (Whitehouse and Smith, 2020). Female employees believed working longer hours did not necessarily contribute to productivity and efficiency (Girón *et al.*, 2020). They were able to produce the same work to a higher standard. They felt that the practices within MNEs are unfair, '*really wrong*,' and highly demotivating to female employees. This particular MNE was influenced by local traditions and could not improve the working conditions of female employees (Vahter and Masso, 2019).

The following figure illustrates the sequence of female employee experiences regarding gender inequality. The graph was designed in response to the information collected by the interviewees. It displays how the topic of, according to them, gender inequality in Japan has been depicted in different contexts and has intervened with their professional and family life.

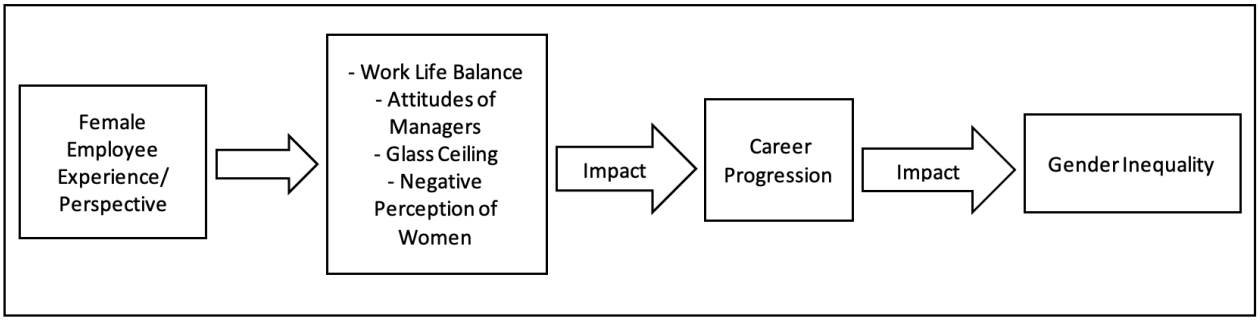

Figure 2: Female Employee Experience/Perspective on Inequality Within an MNE In Japan

The above represents the affirmations of the female employees interviewed regarding their experiences and views on the matter of gender inequality in Japan. The figure is exhibited in four boxes representing the interviewees' different topics. It may be observed that the illustration begins with the perspectives and statements of the interviewed female employees working in the

investment bank through which the sample was collected. The participants stressed four main topics, constituting the central areas of gender inequality in Japan. These are the challenge of 'Work-Life Balance,' the attitudes of male managers towards women, the "Glass Ceiling" matter, and even the perceptions of women regarding their role in society. The third box depicts how the elements of the second one have been able to have a negative impact on the Career Progression of the female employees, leading to the overall retrieved issue of Gender Inequality (fourth box).

In detail, through the findings, it was discovered that there is a challenge of balancing work and personal life for workers of the targeted investment bank. Compared to the United States, the data show that Japanese working women suffer significant obstacles regarding working hours. Women also fear losing their jobs if they don't work longer hours than males. Wages were also considered inadequate for the number and length of responsibilities, indicating severe gender imbalance in the Japanese labor market. Moreover, anxiety regarding starting a family and eventually choosing parenting children over working was stressed. Especially women in Japan face complex decision-making processes and are expected to prioritize reproduction and childrearing above a lucrative profession. A reduction in gender disparity in Japanese society is clearly supported by this data. Men's management was adversely influenced by the likelihood of women becoming pregnant and departing at some point during their careers. Women without dependents were treated differently and more fairly. These results were notable and controversial, highlighting the consequences of gender discrimination in the workplace. The following participant testimonies corroborate the study's original premise about unfair treatment and attitudes toward females in Japanese culture and support the content of the above figure.

CONCLUSION

The study has confirmed that the gender pay gap is very much 'alive and unwell' in the MNE under investigation and that women had to endure several issues compared to their male counterparts. The research allowed the composition of certain conclusions regarding the topic explored. It was clear from each of the 23 respondents that the gender pay gap was evident, negatively affecting the motivation and wellbeing of those interviewed. Japan's low ranking in the Gender Gap Index appears to be as relevant in 2020 as it was in 2018. This disappointing finding confirmed that males tended to dominate senior positions and that women were seen as weaker in comparison. Sadly, Abe's (2010) study on Japan's slow progress in overcoming the gender pay gap was found to be unchanged in the Japanese subsidiary of the U.S. investment bank. Concerning the way through which females were perceived and treated by males in the studied organization, women were addressed in relatively unfair terms by their male colleagues despite displaying advanced qualifications and experience in some cases. This could be attributed to the "macho" working culture and the patriarchal society in which the study was conducted. Women were viewed as incapable of working for as long as men and were not trusted to return to the same work capacity after devoting time to giving birth to children. These old-fashioned and discriminatory attitudes were found throughout the organization, confirming the arguments of Sato *et al.* (2019) and Komagawa (2016).

Moreover, the study discovered that women were restricted in their career progression as a 'glass ceiling' approach was applied by the organization. It was surprising that most interviewees have

decided to accept this situation, albeit reluctantly. Despite legislation being in place to mitigate direct gender discrimination (such as the 1985 Equal Employment Opportunity Act), the research found that gender discrimination was, in fact, widespread and rooted in the organization's culture.

Theoretical Implications

This paper has highlighted the challenges female employees experience and the impact it has had on their careers at an MNE within the finance industry in Japan. MNEs from the West are expected to implement higher standards of working practices across their operations globally (Chiang *et al.*, 2016). However, this particular MNE in Japan treated female employees differently compared to their male counterparts. Female employees felt that the practices within MNEs in Japan are unfair, '*really wrong*,' and demotivating. Female employees were negatively perceived and were viewed as '*weak*,' '*slow*,' and '*indecisive*.' On the one hand, male managers rely more on experienced female employees. On the other hand, experienced female employees do not always rely on their male managers. Additionally, female employees prefer to focus on efficiency and the quality of work produced as opposed to the number of hours spent at work. They believe that the quality of work should determine the commitment to work, not the hours spent in the workplace.

Practical Implications

The level of reliance of male managers on experienced female employees was higher compared to skilled female employees on their male managers. MNEs need to retrain their managers, who are located across global operations, on how to interpret these guidelines and implement them consistently across their operations so that all employees, despite gender, are fairly treated in the workplace. The Japanese government introduced the Promotion of Women's Participation and Advancement in the Workplace Act in 2016 (Ikeda, 2019). It is vital for MNEs, operating in Japan to implement legislation introduced by the Japanese government, encouraging more women to actively engage in employment and career development. This will positively contribute to the Japanese economy and society by decreasing the gender gap in the workplace and ultimately fighting against the unfair distribution of wages. Thus, MNEs should focus on greater equality and inclusion within the workplace. In association with that, they could consider using women with dual roles who have been able to build successful careers within MNEs in the financial sector as role models. Previous studies have demonstrated that women are more inspired by the work of other women as they can easily relate to them (Hennekam, 2016). This research has made a significant contribution by exploring potential gender inequalities in Japanese MNEs, a topic about which not much has been written in recent years. Keeping in mind the rapidly changing environment and Japanese society, this study attempts to bring new evidence about this contemporary issue.

Limitations and Ideas for Future Research

The data displayed throughout the study was derived from MNE employees within a banking organization in Japan. Therefore, findings from this research may not be easily generalized in international settings and contexts, including organizations worldwide. Although the study focused on one organization, it has created a valuable in-depth insight regarding female employees'

experiences and perceptions of working within that organization, stressing inequality within the workplace.

Throughout the search conducted for the literature review, it was observed that the literature does not contain sufficient information regarding the general topic of exploration, gender inequality in Japan. In other words, the content of the majority of their articles maintains a neutral position towards the matter, and in most cases, there were no mentions of it. It would be an interesting study for future research to examine the possible reasons behind the absence of the particular content on such a crucial and contemporary issue.
We strongly support that future studies may benefit from exploring the differences regarding the various approaches to female employees between Japanese and foreign managers working in MNEs within the financial sector in Japan, such as banks. Subsequent research on how Japanese organizations and MNEs treat female employees would also enrich the existing literature within this study area. Moreover, a larger sample would undoubtedly assist with the potential generalization of findings and increase the accuracy of the retrieved information.

BIBLIOGRAPHY

1. Abbott, P., & Teti, A. (2017). A generation in waiting for jobs and justice: Young people not in education employment or training in North Africa. *Arab Transformations Working Paper*, *18*.

2. Ambros, B. R. (2015). *Women in Japanese religions*. New York University Press.

3. Asakawa, S., & Sasaki, M. (2020). Can childcare benefits increase maternal employment? Evidence from childcare benefits policy in Japan. IZA Discussion Paper No. 13589.

4. Baron, J. (2020). Mass attitudes and discrimination against hypothetical job candidates in Japan: A resumé-based survey experiment. *Available at SSRN*: https://ssrn.com/abstract=3631838

5. Barrera-Verdugo, G. (2021). Impact of self-perceptions, social norms, and social capital on nascent entrepreneurs: a comparative analysis by level of economic development in Latin American countries. *Journal of Innovation and Entrepreneurship*, *10*(1), 1-19.

6. Bell, E., Bryman, A., & Harley, B. (2018). *Business research methods*. Oxford University Press.

7. Brinton, M. C., & Mun, E. (2016). Between state and family: managers' implementation and evaluation of parental leave policies in Japan. *Socio-Economic Review*, *14*(2), 257-281.

8. Brinton, M. C., & Oh, E. (2019). Babies, work, or both? Highly educated women's employment and fertility in East Asia. *American Journal of Sociology*, *125*(1), 105-140.

9. Broecke, S., Quintini, G., & Vandeweyer, M. (2017). Explaining international differences in wage inequality: Skills matter. *Economics of Education Review*, *60*, 112-124.

10. Chiang, F. F., Lemański, M. K., & Birtch, T. A. (2017). The transfer and diffusion of HRM practices within MNCs: lessons learned and future research directions. *The International Journal of Human Resource Management*, *28*(1), 234-258.

11. Cho, Y., Shin, M., Billing, T. K., & Bhagat, R. S. (2019). Transformational leadership, transactional leadership, and affective organizational commitment: a closer look at their relationships in two distinct national contexts. *Asian Business & Management*, *18*(3), 187-210.

12. Dalton, E. (2017). Womenomics, 'equality' and Abe's neo-liberal strategy to make Japanese women shine. *Social Science Japan Journal*, *20*(1), 95-105.

13. Diamond, J. (2018). Employment status persistence in the Japanese labour market. *The Japanese Economic Review*, *69*(1), 69-100.

14. Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1-4.

15. George, A. J. (2016). Research ethics. *Medicine*, *44*(10), 615-618.

16. Girón, A., & Kazemikhasragh, A. (2021). Gender Equality and Economic Growth in Asia and Africa: Empirical Analysis of Developing and Least Developed Countries. *Journal of the Knowledge Economy*, 1-11.

17. Girón, A., Kazemikhasragh, A., Cicchiello, A. F., & Panetti, E. (2021). Sustainability reporting and firms' economic performance: Evidence from Asia and Africa. *Journal of the Knowledge Economy*, *12*(4), 1741-1759.

18. Girón, A., Kazemikhasragh, A., Cicchiello, A. F., & Panetti, E. (2021). Financial Inclusion Measurement in the Least Developed Countries in Asia and Africa. *Journal of the Knowledge Economy*, 1-14.

19. Gordon, A. (2017). New and enduring dual structures of employment in Japan: The rise of non-regular labor, 1980s–2010s. *Social Science Japan Journal*, *20*(1), 9-36.

20. Hemmert, M., Cross, A. R., Cheng, Y., Kim, J. J., Kohlbacher, F., Kotosaka, M., ... & Zheng, L. J. (2019). The distinctiveness and diversity of entrepreneurial ecosystems in China, Japan, and South Korea: an exploratory analysis. *Asian Business & Management*, *18*(3), 211-247.

21. Hemmert, M., Cross, A. R., Cheng, Y., Kim, J. J., Kotosaka, M., Waldenberger, F., & Zheng, L. J. (2021). New venture entrepreneurship and context in East Asia: a systematic literature review. *Asian Business & Management*, 1-35.

22. Hendry, J. (1993). The role of the professional housewife. In Hunter, J. (Ed.). (1993). *Japanese women working* (pp. 233-250). London: Routledge.

23. Hendry, J. (2019). *Understanding Japanese society*. (5th ed.). London: Routledge.

24. Hennekam, S. (2016). Identity transition during pregnancy: The importance of role models. *Human Relations*, *69*(9), 1765-1790.

25. Hernon, M. (2018). Fired for Having a Baby: Victims of Maternity Harassment in Japan Speak Out. *Retrieved from Tokyo Weekender: https://www.tokyoweekender.com/2018/09/fired-for-having-a-baby-victims-of-maternity-harassment-in-japan-speak-out*.

26. Huang, L., Yang, Y., & Sekiguchi, T. (2020). Attractiveness of Japanese firms to international job applicants: the effects of belongingness, uniqueness, and employment patterns. *Asian Business & Management*, *19*(1), 118-144.

27. Israel, K. F., & Latsos, S. (2020). The impact of (un) conventional expansionary monetary policy on income inequality–Lessons from Japan. *Applied Economics*, *52*(40), 4403-4420.

28. Kachi, Y., Inoue, A., Eguchi, H., Kawakami, N., Shimazu, A., & Tsutsumi, A. (2020). Occupational stress and the risk of turnover: a large prospective cohort study of employees in Japan. *BMC Public Health*, *20*(1), 1-8.

29. Kallio, H., Pietilä, A. M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. *Journal of Advanced Nursing*, *72*(12), 2954-2965.

30. Kamberidou, I. (2020). "Distinguished" women entrepreneurs in the digital economy and the multitasking whirlpool. *Journal of Innovation and Entrepreneurship*, *9*(1), 1-26.

31. Kan, M. Y., & Hertog, E. (2017). Domestic division of labour and fertility preference in China, Japan, South Korea, and Taiwan. *Demographic Research*, *36*, 557-588.

32. Kato, T., & Kodama, N. (2018). The effect of corporate social responsibility on gender diversity in the workplace: econometric evidence from Japan. *British Journal of Industrial Relations*, *56*(1), 99-127.

33. Kawase, K., Nomura, K., Tominaga, R., Iwase, H., Ogawa, T., Shibasaki, I., ... & Maeda, K. (2018). Analysis of gender-based differences among surgeons in Japan: results of a survey conducted by the Japan Surgical Society. Part. 2: personal life. *Surgery Today*, *48*(3), 308-319.

34. Kemper, L. E., Bader, A. K., & Froese, F. J. (2018). Promoting gender equality in a challenging

environment: The case of Scandinavian subsidiaries in Japan. *Personnel Review*, 48(1), 56-75.

35. Khalil, O., & Marouf, L. (2017). A cultural interpretation of nations' readiness for knowledge economy. *Journal of the Knowledge Economy*, *8*(1), 97-126.

36. Kiger, M. E., & Varpio, L. (2020). Thematic analysis of qualitative data: AMEE Guide No. 131. *Medical Teacher*, *42*(8), 846-854.

37. Kim, R. C., Saito, A., & Avvari, V. M. (2020). Interpretation and integration of "creating shared value" in Asia: implications for strategy research and practice. *Asian Business & Management*, *19*(4), 379-406.

38. King, N., Horrocks, C., & Brooks, J. (2018). *Interviews in qualitative research*. Sage.

39. Kitada, M., & Harada, J. (2019). Progress or regress on gender equality: The case study of selected transport STEM careers and their vocational education and training in Japan. *Transportation Research Interdisciplinary Perspectives*, *1*, 100009.

40. Kobayashi, Y., & Kondo, N. (2019). Organizational justice, psychological distress, and stress-related behaviors by occupational class in female Japanese employees. *PloS One*, *14*(4), e0214393.

41. Kodama, N., Javorcik, B. S., & Abe, Y. (2018). Transplanting corporate culture across international borders: Foreign direct investment and female employment in Japan. *The World Economy*, *41*(5), 1148-1165.

42. Kodate, N., & Timonen, V. (2017). Bringing the family in through the back door: the stealthy expansion of family care in Asian and European long-term care policy. *Journal of Cross-Cultural Gerontology*, *32*(3), 291-301.

43. Komagawa, T. (2016). Gender-based job segregation and the gender gap in career formation: Focusing on bank clerical staff since the postwar years. *Japan Labor Review*, *13*(3), 58-79.

44. Lee, J. Y., Colpan, A. M., Ryu, Y. S., & Sekiguchi, T. (2021). What do we know about the internationalization of Asian business groups? A systematic review and future research agenda. *Asian Business & Management*, 1-29.

45. Lee, S. H., Ogawa, N., & Matsukura, R. (2009). Is childcare leave effective in raising fertility in Japan?. *Asian Population Studies*, *5*(3), 349-369.

46. Lei, X. (2017). "What We Want is to be Happy rather than Marrying": Exploring Japanese Single Women's Perceptions on Marriage. *Journal of International and Advanced Japanese Studies*, *9*, 15-29.

47. Linehan, M. (2019). *Senior female international managers*. Routledge.

48. Makoto, K., Gordon, A., & Hane, M. (2018). *Portraits of the Japanese workplace: labor movements, workers, and managers*. Routledge.

49. Meyer-Ohle, H. (2021). Business models, stakeholders and capabilities in coping with societal grand challenges: the case of Japan's convenience stores. *Asian Business & Management*, *20*(4), 465-487.

50. Mirza, V. (2016). Young women and social change in Japan: Family and marriage in a time of upheaval. *Japanese Studies*, *36*(1), 21-37.

51. Morris, J., Hassard, J., Delbridge, R., & Endo, T. (2021). Understanding managerial work in the modern Japanese firm: The influence of new organizational forms and changing human resource management practices. *Economic and Industrial Democracy*, *42*(4), 1378-1406.

52. Nagase, N., & Brinton, M. C. (2017). The gender division of labor and second births: Labor market institutions and fertility in Japan. *Demographic Research*, *36*, 339-370.

53. Nagy, S. R. (2016). *Japan's Demographic Revival: Rethinking Migration, Identity, and Sociocultural Norms*. World Scientific.

54. Nemoto, K. (2016). *Too few women at the top*. Cornell University Press.

55. Ng, E., Han, Y., Stamper, C., & Klarsfeld, A. (2021). *Handbook on Diversity and Inclusion Indices*. Edward Elgar.

56. Ng, J. C. Y., Huang, M. M. D., & Liu, Y. (2016). The 'feminine'entrepreneurial personality trait: The competitive advantage of female college-student entrepreneurs in Chinese wei-shang businesses?. *Asian Business & Management*, *15*(5), 343-369.

57. OECD (2014). Society at a Glance 2014: OECD Social Indicators. OECD Publishing, pp.1-143.

58. OECD (2015). The OECD Observer. Paris, June 2015, p.30.

59. Opsal, T., Wolgemuth, J., Cross, J., Kaanta, T., Dickmann, E., Colomer, S., & Erdil-Moody, Z. (2016). "There Are No Known Benefits..." Considering the Risk/Benefit Ratio of Qualitative Research. *Qualitative Health Research*, *26*(8), 1137-1150.

60. Pananond, P. (2016). From servant to master: Power repositioning of emerging-market companies in global value chains. *Asian Business & Management*, *15*(4), 292-316.

61. Piotrowski, M., Kalleberg, A., Bond, E., & Wolford, R. (2018). Non-standard work and

fertility: A comparison of the U.S. and Japan. *Asian Population Studies*, 14(2), 116-136.

62. Piotrowski, M., Yoshida, A., Johnson, L., & Wolford, R. (2019). Gender role attitudes: An examination of cohort effects in Japan. *Journal of Marriage and Family*, *81*(4), 863-884.

63. Quentin, D., & Campling, L. (2018). Global inequality chains: Integrating mechanisms of value distribution into analyses of global production. *Global Networks*, *18*(1), 33-56.

64. Ramesh, S. (2020). Entrepreneurship in China and India. *Journal of the Knowledge Economy*, *11*(1), 321-355.

65. Raymo, J. M., & Park, H. (2020). Marriage decline in Korea: Changing composition of the domestic marriage market and growth in international marriage. *Demography*, *57*(1), 171-194.

66. Saengchai, S., Siriattakul, P., & Jermsittiparsert, K. (2019). The mediating role of employee engagement between team and co-worker relation, work environment, training and development and employee performance. *International Journal of Psychosocial Rehabilitation*, *23*(4), 853-865.

67. Saitova, E., & Di Mauro, C. (2021). The role of organizational and individual-level factors for the inclusion of women managers in Japan. *International Journal of Organizational Analysis*, in-print.

68. Sato, K., Hashimoto, Y., & Owan, H. (2019). Gender differences in Career. *Journal of the Japanese and International Economies*, *53*, 101028.

69. Seitz, S. (2016). Pixilated partnerships, overcoming obstacles in qualitative interviews via Skype: A research note. *Qualitative Research*, *16*(2), 229-235.

70. Senzaki, S., Masuda, T., Takada, A., & Okada, H. (2016). The communication of culturally dominant modes of attention from parents to children: a comparison of Canadian and Japanese parent-child conversations during a joint scene description task. *PloS One*, *11*(1), e0147199.

71. Sugimoto, Y. (2020). *An introduction to Japanese society*. Cambridge University Press.

72. Suutari, V., Brewster, C., Mäkelä, L., Dickmann, M., & Tornikoski, C. (2018). The effect of international work experience on the career success of expatriates: A comparison of assigned and self-initiated expatriates. *Human Resource Management*, *57*(1), 37-54.

73. Suzuki, K., & Avellaneda, C. N. (2018). Women and risk-taking behaviour in local public finance. *Public Management Review*, *20*(12), 1741-1767.

74. Takami, T. (2018). Gender segregation at work in Japanese companies: Focusing on gender disparities in desire for promotion. *Japan Labor Issues*, *2*(11), 7-12.

75. Thelen, T., & Haukanes, H. (2016). Parenting after the century of the child. London: Routledge.

76. United Nations Entity for Gender Equality and the Empowerment of Women. (2019). *Policies, initiatives and tools to promote women's economic empowerment in the world of work in Japan* (p. 5). International Labour Organization. Retrieved from https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/---multi/documents/briefingnote/wcms_724865.pdf

77. Villa, L. F. (2019). Classic patriarchal values and their effects on working Japanese women. *Online Journal Mundo Asia Pacifico*, *8*(14), 60-75.

78. Whitehouse, G., & Smith, M. (2020). Equal pay for work of equal value, wage-setting and the gender pay gap. *Journal of Industrial Relations*, *62*(4), 519-532.

79. Wu, J., & Zhou, J. (2020). How the configurations of job autonomy, work–family interference, and demographics boost job satisfaction: an empirical study using fsQCA. *Asian Business & Management*, 1-22.

80. Yamaguchi, M., & Rand, S. (2019). Issues and challenges in comparing carers' quality of life in England and Japan: lessons from developing the Japanese version of the ASCOT-Carer. *International Journal of Care and Caring*, *3*(3), 459-464.

81. Yamaguchi, S. (2017). Family policies and female employment in Japan. *The Japanese Economic Review*, *68*(3), 305-322.

82. Young, J. C., Rose, D. C., Mumby, H. S., Benitez-Capistros, F., Derrick, C. J., Finch, T., ... & Mukherjee, N. (2018). A methodological guide to using and reporting on interviews in conservation science research. *Methods in Ecology and Evolution*, *9*(1), 10-19.

83. Yu, W. H. (2020). *Gendered trajectories*. Stanford University Press.

84. Zhao, Z., & Hayes, A. C. (Eds.). (2017). *Routledge handbook of Asian demography*. Routledge.

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REALISM: THE GUIDING STAR OR A MISLEADING LIGHT IN INTERNATIONAL RELATIONS?

Mihir Mahagaonkar & Suddha Chakravartti

ABSTRACT: *Realist explanations of contemporary issues seem to be falling short, despite the theory's prevalence for decades. In light of recent criticisms, this paper aims to investigate the practicality of realism in lieu of contemporary changes in the international system. The paper delves into the fundamental ideas of the realist framework, such as self-help, anarchy, and survival. The paper then moves on to examine contemporary flashpoints, such as tensions between the United States and China or between Russia and Ukraine, and the realist perspectives on these dynamics of power shift and balance, going beyond the examination of realist-validated historical eras like the Cold War. It also engages critiques that question the state-centrism underpinning realism considering the emergence of transnational along with its inability to forecast when conflict/cooperation in the global arena will end.*

The paper argues for the need of continuous improvement rather than rejecting realism. Despite the current chaos, the article argues that realist theory provides the most viable explanation for the motivations behind topics like alliances and armament races. In an era of perpetual transition, the lessons taught by realist on the limits of sovereignty and the strategic competition that directs statecraft have become more pertinent than ever. The paper seeks to contribute to the ongoing discussion on the validity of realism as the most enlightening, but incomplete, conceptual structure in international relations by analysing its theoretical and practical foundations.

KEYWORDS: realism, security, international relations, statism, survival, self-help.

Numerous theoretical frameworks provide support for scholarship in international relations, each of which shed light on the interplay between national and international factors in different ways. Realist perspectives may appear out of place in the field of contemporary international relations research, which is preoccupied with issues such as globalisation, interconnectedness, collective security, sustainable development, global civil society, open borders, and cultural diversity. Yet realism has been the most prominent and long-lasting paradigm in the global arena, a perspective that is characterised by an emphasis on competition and conflict in the international arena. In short, "*realism emphasises that constraints on politics imposed by human nature and the absence of international government. Together they make international relations largely a realm of power and interest*" (Donnelly, 2000).

The dimensions of *power* and *interest* being the starting points of enquiry, realist thinking points to a long tradition of political thought that includes prominent historical figures like Sun Tzu, Hobbes, Machiavelli, Chanakya, and Thucydides. However, as an academic enquiry realism, as

an international relations theory, gained momentum during World War II, as it offered a solid framework for understanding the nature of conflicts, *i.e*, how and why the worst conflict in known history originated after a period of supposed peace and optimism (Gold and McGlinchey, 2017). Realism is based on objectively studying and understanding the dynamics of the international system, and as such, disregards any emphasis on moral sentiments. Realists emphasise that State actors that populate the *Westphalian* international system play an infinite game where, in the absence of a world government, the anarchic international system dictates that States must put primacy on their survival over everything else.

Whilst the belief in the primacy of State survival is shared by all realists, the theory has evolved overtime that demonstrates the diversity of viewpoints that comprise it. "*The growing tensions among superpowers have revived the realist-idealist debate in the twenty-first century and have led to a resurgence of interest in the realist tradition*" (Korab-Karpowicz, 2010) but its implications remain an ongoing subject of debate among scholars. This article delves into realist theory, discussing its foundations, its limitations, and its practical implications in international politics. To fully grasp why and how realism is still remains the most important theoretical framework in international relations, we will examine its historical origins and modern iterations.

REALISM IN THEORY

Statism, survival, and self-help are the three pillars upon which realist international relations theory rests, and they influence its view of global dynamics in substantial ways. "*Morgenthau identified three patterns of power among states: to attain, increase, and project their power. He noted that these three patterns were the root cause of humanity's lust for power.*" (Badri, 2021).

The realist framework, which is based on these assumptions, offers a thorough explanation of how nations act in the anarchic realm of foreign policy. As the primary player in global interactions, the state is highlighted by the first principle, which is that of "*statism*" (Whitcomb Riley, 2013). The state's distinguishing feature is its sovereignty, which was established and has evolved primarily to provide security. This viewpoint recognises the state's monopoly on lawful force both within its boundaries and on the global arena, confirming the notion that state choices and power dynamics define the backdrop for international relations.

The second principle of "*survival*" acknowledges that in a global system where states are not regulated by a world government, each state's primary objective is to sustain itself (Badri, 2021). The realist position is that when there is no overarching government, individual nations will have to compete with one another for resources and protection. The necessity of governments acquiring power to guarantee their existence is a common thread among *defensive realists* like Waltz, who places an emphasis on security as the primary priority, and *offensive realists* like Mearsheimer, who push for the development of hegemonic positions.

The third principle builds upon the absence of an overriding authority (world government) to prevent states from using force against one another. This principle insinuates that states have to turn to the doctrine of "*self-help*". Although the era of collective security and nuclear deterrence has arrived, international politics continues to be a domain that requires *self-help* to succeed in

this arena (Waltz, 2000). This is due to the unequal distribution of resources and abilities available to States that creates a degree of uncertainty in the system. As a result, governments seek to secure their position by trying to maximise *relative gains* over *absolute gains* (Chan, 2013).

REALISM IN PRACTICE

"To explain war is easier than to understand the conditions of peace. If one asks what may cause war, the simple answer is anything. That is Kant's answer: The natural state is the state of war. Under the conditions of international politics, war recurs; the sure way to abolish war, then, is to abolish international politics" (Waltz, 2000). Thus**,** war is indeed nothing more than the continuation of politics, both as a political act as well as a political instrument (von Clausewitz, 2010 ed). Therefore**,** looking at examples of realist ideas in action might shed light on the pervasiveness of realism in international politics. This is most clearly demonstrated by three such epochs: the Cold War period, the modern period defined by China's ascent, along with the ongoing Russia-Ukraine conflict.

The Cold War

"*The Cold War resulted from two great powers having emerged victorious from World War II and clearly defining spheres of influence and only competing on the periphery – where the sphere of influence was undefined or contested*" (Lüdtke, 2021). During the Cold War period and in their classical power struggle, both the United States and the Soviet Union pursued unilateral military advantages through containment and deterrence rather than cooperation. The Arab-Israeli War of 1973 was a prime example of how states react to changes in power balances. In order to demonstrate their expanding power and take advantage of a potential window of opportunity, the Soviet Union re-armed its Arab allies while the United States supported Israel (Mearsheimer and Walt, 2006). The war exemplified the realist belief that, risking instability, the primary goal of state action is to maximise relative advantage over rivals. The realist principle of maintaining a delicate power balance was on full display throughout the Cold War.

Even in the most dire of circumstances, such as the Cuban Missile Crisis, national leaders determined that there was never a compelling reason to deploy nuclear weapons. As a result, no nuclear attack ever occurred throughout the Cold War. Since nuclear retaliation would inevitably follow a nuclear attack, the dangers were never seen to exceed the advantages. Throughout the Cold War, deterrence was effective, but only because both the United States and Russia did their best to persuade the other that it would never be worthwhile to use nuclear weapons (Brown, 2020). As a result of the anarchic nature of the international system, nuclear weapons became an essential tool for governments to protect themselves through deterrence, and this exemplifies the idea of self-help.

The Rise of China

President Richard Nixon delivered an unexpected address to the nation via live televised broadcast on July 15, 1971. During the broadcast, he showed his acceptance to an invitation from

Beijing to embark on a historic visit to the People's Republic of China, a communist country with a population then of 750 million. During the Cold War, China was America's adversary, second only to the Soviet Union (Roos, 2022). From a *realpolitik* standpoint, the United States planned to use China's and the Soviet Union's differences as leverage during the Cold War, which is why this historic visit took place.
Since President Nixon's visit the Chinese influence in global affairs has grown significantly, especially with the turn of the century. China has surpassed all nations in terms of rapid economic growth during the last 20 years. It has become a formidable competitor to America; the world's only superpower (Allison, 2021). "*Twenty years ago, Mearsheimer closed his magnum opus, The Tragedy of Great Power Politics, with some stark advice about American foreign policy toward China. He noted that what makes a future Chinese threat so worrisome is that it might be far more powerful and dangerous than any of the potential hegemons that the United States confronted in the twentieth century*" (Drezner, 2021).

Akin to the *Thucydides Trap*, where the imminent rise of an emerging power threatens to displace the incumbent power, the United States has countered China's growing influence by fortifying its ties within the Indo Pacific along with reigniting the QUAD (Quadrilateral Security Dialogue) with India, Japan and Australia (Associated Press, 2022) and increasing its naval presence in the region. Realist balancing is further demonstrated by the resurgence of the United States' 'Pivot to Asia' policy and Indo-Pacific Economic Framework (IPEF), which aims to offset China's ascent (Forough, 2022). It proves that states will try to keep the power dynamics balanced if it means protecting their interests and staying alive, particularly in dangerous situations.

The Russia-Ukraine Conflict (Balance of Threats)

"States do pay close attention to the balance of power, but what they really care about are threats. The level of threat a state poses to others is partly a function of its overall power, but also its specific military capabilities (especially its ability to conquer or harm others), its geographic proximity, and its perceived intentions" (Walt, 2022b). While the current conflict has gained momentum since 2022, it had been brewing under the surface since the phases of expansion that NATO undertook in the aftermath of the Cold War. "*At any rate, an enlargement plan with Ukraine and Georgia were the final territorial red lines and completely unacceptable at any rate, and that was made clear from the Russian side repeatedly. NATO continued to be ambivalent about it and offered Georgia and Ukraine Membership Action Plans, suggesting that membership in NATO was not a matter of whether, but when"* (Maitra, 2021). Russia perceived a growing threat from NATO's eastward expansion into former Soviet sphere of interest (central and eastern European states), culminating in its annexation of Crimea in 2014 as a direct response to Ukraine's potential NATO membership. Every side feels more and more justified in their resentment, if not outright fear, towards the other. However, their perceptions of threat are fundamentally asymmetrical, which may be a reflection of the extreme imbalance of their strength and international commitments. Even from the NATO and Ukrainian perspective of balancing the threat is "*whether to compromise with Moscow and let Russia have her own small sphere of influence in parts of Europe where there are already Russian established bases and interests, or to push Moscow out and risk a localized proxy war of attrition, is a policy question*" (Maitra, 2021).

These incidents demonstrate the real application of realist principles and highlight the centrality of realist thought in international relations. The principles of statism, self-sufficiency, and survival have shaped the trajectory of global politics from the Cold War nuclear standoff to the present geopolitical tensions between the United States and China and the ongoing conflict between Russia and Ukraine.

WHY REALISM PREVAILS?

While many new theories have surfaced in the field of international relations in recent years, realist frameworks have maintained their position as the most authoritative. Realists strive for the lesser of two evils rather than the absolute good, and their reliance on historical precedent rather than idealised concepts of justice is a key reason for their continued relevance (Kaplan, 2011). The many reasons that make realism such an essential prism through which to examine the intricacies of the modern international system explain not just its lasting appeal, but also its origins.

The anarchic nature of the international system is still very much intact, and it is this anarchy that defines the rules by which sovereign nations conduct their own affairs. Because of the international system's intrinsic anarchy and the necessity to ensure their existence, states—perceived as rational actors—inherently clash. As things are, international institutions are a perfect reflection of this innate disharmony. This anarchic nature is particularly seen in the short-term nature of success of international institutions, "*the EU is in a deep crisis, ASEAN constantly fails to resolve conflicts between its member-states, terrorist organizations and drug cartels are proliferating. In fact, even the United Nations, the omnipresent organization, members of which decided that all possible conflicts must be prevented and put this great responsibility on themselves, appears to be toothless, at times, permitting catastrophes to happen*" (Fazleeva, 2013).

Realist perspectives, on the other hand, do not fall out of relevance; rather, they shed light on the limitations, limits, and tough decisions that States must make in order to remain in existence. "The exercise and accumulation of power is endemic to humanity. In the 20th century alone, this phenomenon has been responsible for over 200 million deaths through war and oppression" (Shah, 2014). This overarching dynamic is exemplified by the fact that the nations of the Global South, which mainly include those in Asia, Latin America, and Africa, are not adopting a strong stance in the Russia-Ukraine crisis. This shows how power dynamics continue to shape international realities of states and citizens (Shidore, 2023).

One of the most important concepts in international relations is the *security dilemma*, which further highlights the importance of power dynamics. A security problem exists when a state's efforts to increase its own security unintentionally weaken those of other states, causing a vicious cycle of insecurity and militarization (Walt, 2022a). This idea is strongly in display in current geopolitical conflicts between Russia and Ukraine and also in the Israel ground operation in Gaza, which lends credence to the realist claim that security competition is inevitable.

Because it captures the complex interplay between security concerns, power dynamics, and the international system's inherent anarchy, realism ultimately triumphs in the field of international

relations. Its conformity with diplomatic practises, simplicity, and predictive and explanatory power all contribute to its prominence. Until there are major shifts in the underlying connotational synergies of the international system, realist views on global politics will be vital. Realist perspectives will persist in illuminating the mechanisms influencing international politics so long as governments function in a survival-driven anarchic environment.

CRITIQUES OF REALISM

While realist perspectives on global issues are compelling, they are not immune to criticism. Fairness requires us to recognise that 'realism' is more of a school of thought than a particular theory when it comes to explaining global conflicts and peacekeeping operations. "The political scientist Robert Gilpin once wrote that no one loves a political realist. His lament seems especially apt today, as the ongoing tragedy in Ukraine has spawned an uptick of realism-bashing" (Walt, 2022c). Even among realists, there are significant points of contention. Although they disagree on what motivates this power struggle, classical realists and structural realists agree that international politics is ultimately about power struggles. States pursue power to ensure their security, because of the anarchic system in international relations (structuralist view), rather than human instinct (classical view).

One common criticism levelled against realist thought is that it is too focused on States and fails to take into account the increasing power of non-state players such as NGOs, international organisations, transnational actors, and multinational companies. These groups and organisations have considerable amount of impact on international politics in today's interconnected world. (Ataman, 2003). Furthermore, the Realist paradigm is inadequate for addressing transnational concerns, such as cyber attacks, global health crises, and climate change, which do not respect state boundaries.

Another major criticism is that the "*review of the literature exposes that realisms major conception of power, which casts a heavy focus on hard power—is problematic. Its theoretic construct seems to be over-simplified and is unable to explain and predict many international outcomes" (Lee, 2018).* This is particularly the case as realists were not able to foresee the end of the Cold War nor the continuation of NATO after that. A realist blind spot that is often highlighted by the adversarial schools of thought (liberal and revolutionary theorists) is the "*emphasis on power and rationality overlooks the role of ideas, worldviews, and beliefs. Even the motivations of actors well versed in power politics are shaped by their beliefs and ideas*" (Balfour, 2023). One of the main arguments against realist frameworks is that they don't explain contemporary conflicts, which have their origins not in rivalry between states but in the legitimacy crisis that plagues many of them along with theological disputes, or even colonial misgivings sometimes going back centuries. This is better understood with the example of the Israel-Palestine conflict, even though it may appear like any other territorial dispute, it has its roots in theological past along with colonial misgivings (McGreal, 2023).

CONCLUSION

Ultimately, realist criticisms are well-founded, but the framework continues to be the gold standard for understanding international relations. Unlike alternative theories, it offers essential insights into anarchy, power, and self-help with a simple, uncluttered philosophy. From the Cold War to modern conflicts, realism has been the only theory to provide an explanation for occurrences as fundamental and nuanced as deterrence, balancing threats, and security challenges.

Strategic limitations on sovereignty and stability are more pressing than ever in this era of renewed superpower competition and chaos, rendering realism ever more crucial. Although non-state actors and new threats have come to prominence, this does not diminish the lasting insights that realism provides about the restrictions and compulsions inside the Westphalian structure. Realist theory should not be abandoned but rather subjected to ongoing empirical assessment and refinement.

However, the complex picture of international relations cannot be fully grasped by looking at it through a realist lens alone. Consequently, while realism remains an influential theory, a more nuanced understanding of the world requires combining its vision with different points of view. Therefore, when navigating the complicated landscape of international relations, realism is best seen as a useful but an incomplete guide.

BIBLIOGRAPHY

1. Allison, G. (2021). *The Great Rivalry: China vs. the U.S. in the 21st Century*. [online] Belfer Center for Science and International Affairs. Available at: https://www.belfercenter.org/publication/great-rivalry-china-vs-us-21st-century [Accessed 1 Dec. 2023].

2. Associated Press (2022). *What is the Quad, and how did it come about?* [online] the Guardian. Available at: https://www.theguardian.com/world/2022/may/24/what-is-the-quad-and-how-did-it-come-about [Accessed 1 Dec. 2023].

3. Ataman, M. (2003). The Impact of Non-State Actors on World Politics: A Challenge to Nation-States. *Alternatives: Turkish Journal of International Relations*, [online] 2(1). Available at: https://dergipark.org.tr/tr/download/article-file/19401 [Accessed 2 Dec. 2023].

4. Ayoob, M. (2016). *The National Interest: Blog*. [online] The National Interest. Available at: https://nationalinterest.org/blog/the-buzz/realisms-gaping-blind-spots%E2%80%94how-fix-them-17306 [Accessed 2 Dec. 2023].

5. Badri, A. (2021). *What is Realism in International Relations?* [online] Adarsh Badri. Available at: https://adarshbadri.me/international-affairs/realist-school-of-international-relations/ [Accessed 1 Dec. 2023].

6. Balfour, R. (2023). *The Blind Spots of Realism*. [online] Carnegie Europe. Available at: https://carnegieeurope.eu/strategiceurope/91074 [Accessed 2 Dec. 2023].

7. Biswas, A. (2023). *Realism Theory In International Relations In Detail*. [online] School of Political Science. Available at: https://schoolofpoliticalscience.com/realism-theory-in-international-relations/#Classical_Realism .

8. Brown, G. (2020). *Deterrence, Norms, and the Uncomfortable Realities of a New Nuclear Age*. [online] War on the Rocks. Available at: https://warontherocks.com/2020/04/deterrence-norms-and-the-uncomfortable-realities-of-a-new-nuclear-age/ [Accessed 1 Dec. 2023].

9. Chan, A.F. (2013). *A Study of Self-Help in Anarchic International Systems*. [online] E-International Relations. Available at: https://www.e-ir.info/2010/07/27/a-study-of-self-help-in-anarchic-international-systems/ [Accessed 1 Dec. 2023].

10. Donnelly, J. (2000). *Realism and International Relations*. [online] Cambridge University Press. Available at: https://catdir.loc.gov/catdir/samples/cam032/99053676.pdf [Accessed 30 Nov. 2023].

11. Drezner, D.W. (2021). Perspective | Would a realist approach to China have been better for the United States? *Washington Post*. [online] Available at: https://www.washingtonpost.com/outlook/2021/11/03/would-realist-approach-china-have-been-better-united-states/ .

12. Fazleeva, A. (2013). *Has Realism 'Got the Big Things Right'?* [online] E-International Relations. Available at: https://www.e-ir.info/2013/08/23/has-realism-got-the-big-things-right/ [Accessed 2 Dec. 2023].

13. Forough, M. (2022). *America's Pivot to Asia 2.0: The Indo-Pacific Economic Framework*. [online] thediplomat.com. Available at: https://thediplomat.com/2022/05/americas-pivot-to-asia-2-0-the-indo-pacific-economic-framework/ [Accessed 1 Dec. 2023].

14. Gold, D. and McGlinchey, S. (2017). *International Relations Theory*. [online] E-International Relations. Available at: https://www.e-ir.info/2017/01/09/international-relations-theory/ [Accessed 13 Dec. 2023].

15. Kaplan, R.D. (2011). *Why John J. Mearsheimer Is Right (About Some Things)*. [online] The Atlantic. Available at: https://www.theatlantic.com/magazine/archive/2012/01/why-john-j-mearsheimer-is-right-about-some-things/308839/ [Accessed 2 Dec. 2023].

16. Korab-Karpowicz, J. (2010). *Political Realism in International Relations (Stanford Encyclopedia of Philosophy)*. [online] Stanford.edu. Available at: https://plato.stanford.edu/entries/realism-intl-relations/ [Accessed 30 Nov. 2023].

17. Lee, T. (2018). *When Hard Power Shrinks: The Midlife Crisis of Realism*. [online] E-International Relations. Available at: https://www.e-ir.info/2018/01/14/when-hard-power-shrinks-the-midlife-crisis-of-realism/ [Accessed 2 Dec. 2023].

18. Lüdtke, L. (2021). *Instability and the search for a new equilibrium*. [online] GIS Reports. Available at: https://www.gisreportsonline.com/r/balance-of-power/ .

19. Maitra, S. (2021). *NATO Enlargement, Russia, and Balance of Threat*. [online] papers.ssrn.com. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3887828 [Accessed 13 Dec. 2023].

20. McGreal, C. (2023). What are the roots of the Israel-Palestine conflict? *The Guardian*. [online] 9 Nov. Available at: https://www.theguardian.com/world/2023/nov/09/why-israel-palestine-conflict-history [Accessed 2 Dec. 2023].

21. Mearsheimer, J. and Walt, S. (2006). *The Israel Lobby and U.S. Foreign Policy.* [online] www.hks.harvard.edu. Available at: https://www.hks.harvard.edu/publications/israel-lobby-and-us-foreign-policy#citation [Accessed 1 Dec. 2023].

22. Roos, D. (2022). *How Nixon's 1972 Visit to China Changed the Balance of Cold War Power*. [online] HISTORY. Available at: https://www.history.com/news/nixon-china-visit-cold-war [Accessed 1 Dec. 2023].

23. Shah, V. (2014). *How Power Shapes our World*. [online] Thought Economics. Available at: https://thoughteconomics.com/how-power-shapes-our-world/ [Accessed 2 Dec. 2023].

24. Shidore, S. (2023). *The Return of the Global South*. [online] Foreign Affairs. Available at: https://www.foreignaffairs.com/world/return-global-south-critique-western-power?check_logged_in=1&utm_medium=promo_email&utm_source=lo_flows&utm_campaign=registered_user_welcome&utm_term=email_1&utm_content=20231202 [Accessed 2 Dec. 2023].

25. von Clausewitz, C. (2010 ed). *On War.* Create Space Independent Publishing Platform.

26. Walt, S.M. (2022a). *Does Anyone Still Understand the 'Security Dilemma'?* [online] Foreign Policy. Available at: https://foreignpolicy.com/2022/07/26/misperception-security-dilemma-ir-theory-russia-ukraine/ [Accessed 2 Dec. 2023].

27. Walt, S.M. (2022b). *What Are Sweden and Finland Thinking?* [online] Foreign Policy. Available at: https://foreignpolicy.com/2022/05/18/nato-sweden-finland-russia-balance-threat/ [Accessed 13 Dec. 2023].

28. Walt, S.M. (2022c). *Why Do People Hate Realism So Much?* [online] Foreign Policy. Available at: https://foreignpolicy.com/2022/06/13/why-do-people-hate-realism-so-much/ [Accessed 2 Dec. 2023].

29. Waltz, K.N. (2000). Structural Realism after the Cold War. *International Security*, [online] 25(1), pp.5–41. Available at: http://www.columbia.edu/itc/sipa/U6800/readings-sm/Waltz_Structural%20Realism.pdf [Accessed 1 Dec. 2023].

30. Whitcomb Riley, J. (2013). *How Realistic is Realism?* [online] E-International Relations. Available at: https://www.e-ir.info/2008/03/02/how-realistic-is-realism/.

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K-POP IDOLS AND MARKETING: A SUCCESS STORY. ANALYSING THE EFFECTIVE PARTNERSHIPS OF BTS TOGETHER WITH KOREAN AND GLOBAL BRANDS

Marc Perello

ABSTRACT: *Korean pop music, or K-Pop, is a worldwide sensation that has drawn millions of fans from various nations and cultures. K-Pop is a cultural industry that includes dance, fashion, beauty, and media in addition to being a musical genre. K-Pop idols have devoted fan bases that are prepared to support them in many ways because they view their idols as role models and influencers. This opens a ton of possibilities for marketing collaborations between K-Pop and other companies, particularly in the tech and luxury industries. This article examines the advantages and tactics of K-Pop idol band BTS and their successful marketing collaborations. This paper focuses, describes, and reviews the alliances made by BTS with Samsung, McDonald's, Unicef and Louis Vuitton, and addresses how these partnerships increased brand awareness, engagement, sales and advocacy for all the parties involved.*

KEYWORDS: **K-Pop, marketing, advertising, BTS, idols.**

Today, it is not possible to separate a company's strategic marketing from digital advertising (West *et al*, 2015). Conducting any type of online campaign to reach a wide audience and thus being able to promote products and services is the daily life of thousands of global brands (Fondevila *et al*, 2021a; 2021b). The emergence of social media platforms in recent years has changed marketing, making celebrities and influencers the focal points of advertising campaigns (Vinerean *et al*, 2013).

Brands and influencers can interact with their audience on a variety of social media channels through special possibilities. By now, the impact of celebrities and influencers on brand image has been thoroughly proven (Tran *et al*, 2019). It is in this scenario that in recent years, the world of influencers and particularly South Koreans, has acquired prominence (Hung, 2021). Whether actors or actresses, singers or celebrities from the entertainment world (Fondevila *et al*, 2021a) or simply once-anonymous people who over time have distinguished themselves on the main social networks, there is a whole horde of Korean influencers capitalising on a great part of the budgets dedicated annually to digital advertising (Khan *et al*, 2022).

In this paper, we will explore this type of marketing focussing on the South Korean Idol Boyband BTS, considered the No1 band in terms of awareness and sales at the moment of writing this article (January 2024).

INFLUENCERS, A TRUE CASH COW

Influencers, whatever their type, characteristically provide three great values to brands to promote their products and services. The first is something as pragmatic and technical as the increase in all the ratios related to interaction (likes, comments and shares) and also in the most mechanical part of the functioning of the internet, such as SEO (Delbaere *et al*, 2021).

Once the most technical part is covered, then comes the most strategic part: that which refers to branding and brand image. Brands love to showcase themselves online (Fondevila *et al*, 2021b), as it reports them with an extended awareness and recognition. From the outset, influencers allow greater brand awareness, thus magnifying the visibility of those who join campaigns with them. Likewise, they also facilitate brand development in terms of such important aspects as tone of voice, brand purpose, or storytelling (Nurhandayani *et al*, 2019).

In successful campaigns, brands can earn between 5 and €6 for every euro invested in influencers. If enormously successful, they can even earn €20 for every euro invested. Logically, for this, a series of conditions must be met, starting from the correct choice of the influencer to the strategic and creative development of the brand and its campaign.

There is a possibility of achieving the opposite effect when marketing through influencers, something we like to call *the boomerang effect*. It occurs when instead of a positive reputational effect, the brand encounters the opposite: a negative reputational effect – an effect that unexpectedly hits them back (hence, the *boomerang* word).
A situation like this one, where something pretendedly positive turns into something negative instead, can lead to a serious reputation loss for both the influencer and the brand if any of the aforementioned aspects have not been treated correctly: strategy, creativity, choice of influencer, and other aspects (Kim *et al*, 2021).

To manage and understand the different levels of effectiveness and efficiency that influencer marketing may have, we have a series of KPIs (Key Performance Indicators) to store and control the data generated after the campaigns and allow us to make the necessary changes or optimizations if needed. Different KPIs allow us to gauge the success of a campaign depending on what it is that we wish to analyse. For instance, awareness can be measured by reach or views, while conversions can be measured by transactions or subscriptions. This series of metrics enables the evaluation of the worth of the investment and, of course, whether we must make any changes or optimise it (Saura *et al,* 2017).

Most of these metrics are counted user by user. They are therefore real, non-statistical data that allow us to know in real time the scope of the campaign and its impact. Among these data, we find all those related to the interactions on social networks. The most common are actions such as liking, commenting and sharing, but also others such as adding content to "favourites" or "reposting" the content. All of this encourages a conversation with the audience and establishes a one-on-one dialogue between the brand and the end user (Ibrahim *et al,* 2017; Chen and Zhao, 2021).

All this interaction is collected in the engagement rate, possibly one of the most important aspects of any digital marketing campaign omitted by many professionals. The truth is that most reports about the success of a digital campaign are usually based on total results, that is, in an accumulation of everything achieved: total of new followers, total of new likes, total of new comments, etcetera. However, this accumulation does not make sense on its own but must be interpreted in relation to the total number of followers for a profile or the total number of impacts received through paid advertising.

A total number may seem very wonderful to us, but an engagement rate of 20% in relation to 2,000 followers is not the same as 5%, but in relation to 2,000,000 followers. In this example, we can say that the second brand has reached more people than the first, or also that the first has higher engagement ratios. In the first example (20% of 2000: 400), a total amount has been reached lower than in the second (5% of 2000000: 100,000). However, it can be deduced that the followers of the first brand are more loyal or at least have known how to interact in a greater way than those of the second brand, and that the followers of the first brand may as well represent a group of more motivated and active followers, who, if they continue to grow, could bring potentially exceptional data to the first brand too, making it reach new heights of engagement.

Another measure most used to know the impact of this type of promotion is the traffic generated by both the website and the application. In fact, only the most formal businesses continue to maintain the website as the centre of their cyber identity exploitation. Younger brands, on the other hand, rely much more on selling directly through their applications or even their social networks, a possibility recently taking by storm both Instagram and TikTok's brands profiles.

Speaking of sales, this is certainly one of the most important KPI together with the ROI (Return on Investment). It is of little use to have reached numerous people or to have them discuss your brand if this is not translated into sales. They may take more or less time to arrive, but they must. Otherwise, even after achieving significant awareness, we would not have been able to convert it to sales. And this would logically affect our income statement (Lal, *et al*, 2020; Silva et al, 2020).

Therefore, one of the big questions for brands wanting to exploit this trend is how much it will cost them to run a campaign with this type of influencer. Although there is no price table as such, among professionals in the sector, a series of estimates help find the appropriate budget. For example, it is widely acknowledged that if an influencer has between 50,000 and 200,000 followers, they can charge around €3,000 for a publication. While if they have more than 1,000,000 followers, they can easily charge double or triple. Logically, the influencer's actual income may vary as agency or representative, if any, must be deducted along with taxes. More differences may arise depending on industries and countries – and the actual influence power of these influencers.

Not all influencers work in the same way, nor are they all equally successful. It is also true that not all brands need them and many of them have an audience or a purchasing moment that will not be affected by the influencer. It is very important to have a global strategy as a company and a particular marketing strategy before betting on influencers. Otherwise, we might reach the implementation and the most operational part, and the results might still not be the desired

ones. It should be noted from this aspect, that the marketing and advertising agency sector is of great importance because they have data from a great number of campaigns of influencers and therefore can better advise the brands wishing to enter this world (Idowu *et al*, 2022; Koslow *et al*, 2022).

KOREAN INFLUENCERS: BREAKING THE BANK

This section looks at how K-pop has influenced consumer trends and grown a global fan base despite cultural barriers (Jenol *et al*, 2020; Ding and Zhuang, 2021). Analysing K-pop's internationalisation lays the groundwork for comprehending its impact on a range of sectors, including marketing (Hong and Kinney, 2022). The emergence of K-pop as a worldwide cultural phenomenon has drawn interest from a wide range of viewers. K-pop's visual and performative elements, in addition to its musical influence, have developed into effective marketing and branding strategies.

The use of Korean influencers by Western brands, although logically also by Eastern brands, among which are Korean ones themselves, seems to be something quite common in today's advertising campaigns – a true example of exceling at the performance of cross cultural marketing (Perelló-Sobrepere, 2020).

The reasons these influencers represent an attractive campaign for brands are different, but they all have something in common: their enormous impact on the younger generations. The social media where influencers usually have the greatest impact are Instagram, YouTube and TikTok—coincidentally, the same which Gen Alpha, Gen Z and Millennials spend more time on.

One of the greatest achievements of Korean influencers is having found the key to creating highly attractive content around their own lives (Ardhiyansyah *et al,* 2021). K-pop celebrities are renowned for their exquisitely styled photos and striking looks. They share everything from their morning routines to the activities of their daily life and, of course, the final part, with leisure, dinners and new facial routines before going to bed (Xu, 2023).

The impact of these influencers is also global. Like their music or movies, their message has managed to cross the borders of the Korean market and, to a greater extent, also those of the Eastern market to capture the Western market. We therefore find that most companies creating content with these influencers are both Eastern and Western. And in both cases, the advertising campaigns work enormously well.

From South Korea, we also get one of the first virtual influencers with a truly human appearance. Her name is Rozy, and she is computer-generated (Cho, 2023). Although if one sees the photographs she posts on Instagram, one would never doubt her humanity. Whether relaxing at a spa centre or shopping at a clothing store, Rozy always puts on her best face. She is 22 years old and will be forever. By hiring her, brands ensure that there will never be a reputation scandal related to her. Rozy is a creation of the company Sidus Studio and has reportedly made them millions of dollars already (Kin & Choi, 2022).

CASE STUDY WITH BTS, THE #1 K-POP IDOL BAND

Currently, the most popular group in K-pop is BTS, managed by the agency Big Hit Entertainment and belonging to HYBE Corporation (Chung and Koo, 2023). This South Korean agency is known for managing several K-pop groups, including BTS. The group comprising Jin, Suga, J-Hope, RM, Jimin, V and Jungkook, is easily recognised within the K-pop genre and is undoubtedly the most famous (Park and Kim, 2020).

All seven members have produced their own songs, penned their own lyrics and are stars in their own right, having huge solo careers. They have led the general sound of the fourth generation of K-pop, and they have one hit song after another, not to mention their flashy and theatrical choreographies accompanying the visual spectacle of their videos, which also helps their songs become viral on Tiktok, where thousands dance to their moves as they learn and gain interest for Korea itself (Cui, 2022; Putri *et al,* 2022).

Overall, BTS has posed for numerous major Korean brands in recent years, including Samsung, Samsonite, Seoul Tourism, FILA, Hyundai, and many more western brands too, such as Louis Vuitton, Puma, UNICEF, McDonald's and Coca-Cola among others.

BTS's collaboration with Samsung

The relationship between Samsung and the BTS group has been excellent, which is why they have appeared in multiple brand spots. They have several campaigns, one of the best-known being "Galaxy for the planet", with a clear brand purpose of sustainability, which shows us how humans should care for the planet (Vidiyawati, and Wibowo, 2023). They have also filmed a black and white commercial belonging to the Galaxy S21 Ultra range, whose artistic direction aimed to highlight the quality of the S21 Ultra model's camera by using it as the main camera to record the same advertisement. More recently, they have also announced the Galaxy Z Flip 5, having done the same with the third and fourth models in the same range previously. Many of these are also not group but individual announcements, which allow many fans to enjoy a greater number of hours of content from each of the members (Azhari and Adiwijaya, K, 2023).

BTS's collaboration with McDonald's

In partnership with the South Korean boy band BTS, the global fast food business McDonald's sold a dish known as the "BTS Meal" (Pratama, 2022). An official statement from Big Hit Entertainment, the band's management company, revealed the partnership between BTS and McDonald's. Before the official release, fans purchased a meal coupon through the ordering service of a restaurant. It soon created a great anticipation. The BTS Meal, which included Chicken McNuggets, medium French fries, a medium Coca-Cola and two hot dipping sauces (Sweet Chili and Cajun), was offered for sale in a few countries between May 26, 2021, and June 20, 2021. Eventually, it was marketed in fifty countries. The meal was delivered in BTS-inspired packaging that was put up for sale on several e-commerce sites as soon as it was released, which proves the anticipation over the band's deal. McDonald's claimed that the release increased their sales and reached over a million units in South Korea in 2021 (Wijaya, 2021).

BTS's collaboration with UNICEF

BTS and UNICEF collaborated on a campaign called #LoveMyself, which was launched in 2017. Its goal was to end violence and abandonment and encourage self-esteem around the world (Sihombing, 2021). As part of this collaboration, Big Hit Entertainment, donated 500 million won (about US$448,000) through the UNICEF Korean Committee to the #ENDviolence campaign in November 2017 and 3% from physical album sales of the "Love Myself" album, as well as revenue from sales of various products. Additionally, BTS raised $3.6 million towards UNICEF's work to end violence. The #LoveMyself campaign has generated almost five million tweets and more than 50 million interactions, such as likes, retweets, replies, and comments, according to a new analysis that is part of the State of the World's Children 2021, the flagship report from UNICEF published in October 2021 (Azzura and Christin, 2023).

BTS's collaboration with LOUIS VUITTON

BTS and Louis Vuitton collaborated on an advertising campaign in 2021. Their members RM, Jin, Suga, Jimin, J-Hope, V and Jungkook became the new global ambassadors of the French house, Louis Vuitton (Mauliamala and Purbantina 2022). The fashion brand explained that it chose the Bangtan Boys as the global image for their worldwide recognition and influence with a series of singles and albums that have not only been nominated for Grammy Awards but also received multi-platinum certification from the American Music Association RIAA (McLaren and Dal Yong, 2020). Additionally, BTS modelled the Louis Vuitton Men's Fall 2021 collection in a film directed by South Korean Jeon Go-woon. With the participation of BTS in the show as ambassadors of the House, Virgil Abloh's collection uses fashion as a tool to change the stereotypes of dress codes (Mistry, 2021; Xiao, 2023).

CONCLUSION

Regardless of their place of birth, influencers and celebrities frequently have a worldwide following, and their participation in advertising campaigns can cut through cultural barriers. Asian influencers have become exponentially more powerful in recent years, especially in the technology and beauty industries. more specifically, Korean influencers, particularly those in the music business. Conversely, the emergence of K-pop as a global cultural phenomenon has drawn interest from a wide range of global viewers. K-pop's visual and performative elements, in addition to its musical influence, have developed into effective marketing and branding strategies. Comprehending the function of celebrities in the marketing industry is essential to appreciating the triumph of campaigns that showcase K-pop celebrities.

BTS has collaborated with more than 60 brands around the world, including brands such as Samsung, Coca-Cola, Hyundai, Fila, Puma, Mattel, Louis Vuitton and many more. The popularity of BTS has led brands to seek to work with them, and expanded the value of the band by $5 billion. These campaigns have demonstrated the power of K-pop idols to connect with global audiences and have set a precedent for future collaborations between K-pop groups and both local and Western brands. However, the success of a marketing campaign depends on many factors, such as product quality, market segmentation, campaign creativity, selection of appropriate marketing channels and the ability of the campaign to reach the audience.

Consumers resonate with K-pop stars not only for their talent but also for their authenticity and relatability. K-pop stars in marketing campaigns can build long-term brand loyalty, as consumers form emotional connections with both the brand and the celebrity ambassador. In light of successful collaborations by BTS over the past years, it seems safe to say that to maintain relevance and reach diverse audiences, brands may still need to explore collaborations with a variety of K-pop groups and solo artists for years to come.

BIBLIOGRAPHY

1. Ardhiyansyah, A., Maharani, D. P., Sari, S. P., & Mansur, U. (2021). K-Pop Marketing Tactics That Build Fanatical Behavior. Nusantara Science and Technology Proceedings, 66-70.

2. Azhari, F., & Adiwijaya, K. (2023, July). The Effect of Social Media Interaction on Repurchase Intention: The Mediation Role of Parasocial Interaction & Celebrity Attachment. Study on BTS and Samsung Smartphone. In 3rd International Conference on Business and Engineering Management (ICONBEM 2022) (pp. 27-39). Atlantis Press.

3. Azzura, C. N., & Christin, M. (2023). Pengaruh Kampanye UNICEF Love MySelf Terhadap Kesehatan Mental Penggemar BTS. eProceedings of Management, 10(4).

4. Chen, Y. R. R., & Zhao, X. (2021). Digital dialogue in online brand communities: Examining the social network outcomes of brands' dialogue with Facebook users. Telematics and Informatics, 57, 101507.

5. Cho, S. Y. (2023). Understanding Computer-Generated Imagery (CGI) Influencers: A Mixed Method Cross-Cultural Comparison of the US and South Korea (Doctoral dissertation, University of Miami).

6. Chung, D. J., & Koo, K. R. (2023). The role of cultural diversity in creating value: a case study of South Korea's pop band BTS. Asia Pacific Business Review, 29(5), 1275-1299.

7. Cui, C. (2022). Reviewing the Culture and Impact of Pop Culture Tourism: A Case Study of BTS (Doctoral dissertation, Auckland University of Technology).

8. Delbaere, M., Michael, B., & Phillips, B. J. (2021). Social media influencers: A route to brand engagement for their followers. *Psychology & Marketing*, *38*(1), 101-112.

9. Ding, Y., & Zhuang, X. (2021). Why Chasing Kpop? Is Fandom Truely Crazy?--The Motivations and Behaviors of Kpop Fans. In International Conference on Educational Reform, Management Science and Sociology (ERMSS 2021) (pp. 51-57).

10. Fondevila-Gascón, J. F., Mir-Bernal, P., Barrientos-Báez, A., & Perelló-Sobrepere, M. (2021b). Cinematic blueprint on Social Media: A comparative analysis. Fotocinema. Revista Científica de Cine y Fotografía, (22), 427-445.

11. Fondevila-Gascón, J. F., Mir-Bernal, P., Perelló-Sobrepere, M., & Polo-López, M. (2021a). Interactivity in social media: a comparison in the movie studios sector. In *Digital Marketing & eCommerce Conference* (pp. 43-49). Cham: Springer International Publishing.

12. Hong, C., Cho, H., & Kinney, D. (2022). K-pop and Cultural Appropriation: Influences from the West and Within South Korean Society. Journal of Student Research, 11(1).

13. Hung, K. (2021). Celebrity, Influencer, and brand endorsement: Processes and effects. In *Oxford Research Encyclopedia of Communication*.

14. Ibrahim, N. F., Wang, X., & Bourne, H. (2017). Exploring the effect of user engagement in online brand communities: Evidence from Twitter. Computers in Human Behavior, 72, 321-338.

15. Idowu, A. A., Aderemi, A. S., Olawale, A. I., & Omotayo, A. N. (2022). Assessing the Impact of Advertising Agencies on Effective Advertising Campaigns. British Journal of Mass Communication and Media Research, 2(1), 71.

16. Jenol, A., Ayuni, N., & Ahmad Pazil, N. H. (2020). K-pop fans' identity and the meaning of being a fan. *Universiti Sains Malaysia*.

17. Khan, S., Zaman, I., Khan, M. I., & Musleha, Z. (2022). Role of Influencers in Digital Marketing: The moderating impact of follower's interaction. Gmjacs, 12(1), 15-43.

18. Kim, E., Duffy, M., & Thorson, E. (2021). Under the influence: Social media influencers' impact on response to corporate reputation advertising. Journal of Advertising, 50(2), 119-138.

19. Kim, H., & Choi, Y. M. (2022, September). A Case Study of Fashion Style in Accordance With TPO of K-Virtual Influencer. In *International Textile and Apparel Association Annual Conference Proceedings* (Vol. 78, No. 1). Iowa State University Digital Press.

20. Koslow, S., Sameti, A., van Noort, G., Smit, E. G., & Sasser, S. L. (2022). When bad is good: Do good relationships between marketing clients and their advertising agencies challenge creativity?. Journal of Advertising, 51(3), 385-405.

21. Lal, B., Ismagilova, E., Dwivedi, Y. K., & Kwayu, S. (2020). Return on investment in social media marketing: Literature review and suggestions for future research. Digital and social media marketing: emerging applications and theoretical development, 3-17.

22. Mauliamala, C., & Purbantina, A. P. (2022). Strategi Marketing Global Luxury Brand "Louis Vuitton" Dalam Value Creation Melalui Figure Korean Wave. Jurnal Ekonomika dan Bisnis, 9(1), 45-62.

23. McLaren, C., & Dal Yong, J. I. N. (2020). "You Can't Help But Love Them": BTS, Transcultural. Korea Journal, 60(1), 100-127.

24. Mistry, I. (2021). A dissertation on Hully Waves (Korean wave) effect on celebrity endorsements (Doctoral dissertation).

25. Nurhandayani, A., Syarief, R., & Najib, M. (2019). The impact of social media influencer and brand images to purchase intention. Jurnal Aplikasi Manajemen, 17(4), 650-661.

26. Parc, J., & Kim, Y. (2020). Analyzing the reasons for the global popularity of BTS: A new approach from a business perspective. Journal of International Business and Economy, 21(1), 15-36.

27. Perelló-Sobrepere, M. (2020, May). CROSS-CULTURAL MARKETING IN THE 21ST CENTURY: WHY ANY FUTURE SCOPE NEEDS TO LOOK AT INFORMATION AND COMMUNICATION TECHNOLOGIES. In GLOBAL (Vol. 4, p. 51).

28. Pratama, N. W. A. (2022). Strategi Kampanye Komersial Mcdonald's dalam Kemasan BTS Meal. JSRW (Jurnal Senirupa Warna), 10(1), 38-51.

29. Putri, E. A. L., Herdanezza, P. T., & Viartasiwi, N. (2022). Kim, Youna.(Ed.). The Soft Power of the Korean Wave: Parasite, BTS and Drama. The Journal of Indonesia Sustainable Development Planning, 3(3), 317-319.

30. Saura, J. R., Palos-Sánchez, P., & Cerdá Suárez, L. M. (2017). Understanding the digital marketing environment with KPIs and web analytics. Future Internet, 9(4), 76.

31. Sihombing, L. H. (2021). Analyzing the impact of BTS on resolving the problem of youth mental health. JISIP (Jurnal Ilmu Sosial dan Pendidikan), 5(2).

32. Silva, S. C., Duarte, P. A. O., & Almeida, S. R. (2020). How companies evaluate the ROI of social media marketing programmes: insights from B2B and B2C. Journal of Business & Industrial Marketing, 35(12), 2097-2110.

33. Tran, G. A., Yazdanparast, A., & Strutton, D. (2019). Investigating the marketing impact of consumers' connectedness to celebrity endorsers. *Psychology & Marketing*, *36*(10), 923-935.

34. Vidiyawati, A. V. S., & Wibowo, A. A. (2023). Semiotics analysis on "Samsung x BTS: Galaxy for the Planet" Advertisement. COMMICAST, 4(1), 37-47.

35. Vinerean, S., Cetina, I., Dumitrescu, L., & Tichindelean, M. (2013). The effects of social media marketing on online consumer behavior. *International journal of business and*

management, *8*(14), 66.

36. West, D. C., Ford, J. B., & Ibrahim, E. (2015). *Strategic marketing: creating competitive advantage*. Oxford University Press, USA.

37. Wijaya, N. P. N. P., Fikriyya, R. F. N., Aulia, N., Hambali, A. G., Damayanti, N., & Sari, N. R. (2021). The influence of Viral Marketing on social media and Online Community on Purchasing Decision in the Pandemic Era (Case Study of BTS Meal McDonald's Product, Bandung Area). Rev. Int. Geogr. Educ. Online, 11, 3385-3391.

38. Xiao, J. (2023, September). The Role of Social Media in the Purchase of Luxury Goods–Taking Louis Vuitton as an Example. In 3rd International Conference on Economic Development and Business Culture (ICEDBC 2023) (pp. 213-220). Atlantis Press.

39. Xu, M. (2023). Research on the Current Development and Optimization of K-pop Industry's Digital Marketing Strategy. *Highlights in Business, Economics and Management*, *23*, 132-141.

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CORPORATE SUSTAINABILITY PRACTICES AND FINANCIAL PERFORMANCE: CONCEPTUAL AND THEORETICAL FRAMEWORK

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ABSTRACT: *This paper aims to provide a conceptual and theoretical framework for future empirical research investigating the interaction between corporate sustainability practices and financial performance. The research attempts to address the question; whether engaging in corporate sustainability affects the financial performance of firms, and if it does, whether this impact is positive or negative? The conceptual framework highlights that although 'corporate social responsibility' and 'corporate sustainability' terms are used interchangeably within the academic literature they have different conceptual origins and evolution processes. The findings lead with the suggestion of using 'corporate sustainability practices' as an umbrella term to encompass non-financial activities of firms to address social and environmental issues. Furthermore, the theoretical framework of this paper captured different views on the relationship between corporate sustainability practices and financial performance, including neoclassical and traditionalist theory, stakeholder and good management theories, agency theory, and slack recourses and virtuous circle theories.*

KEYWORDS: corporate sustainability practices, CSR, social and environmental issues, financial performance.

Corporations all over the world experience growing regulatory requirements and increasing pressures from both customers and investors to incorporate sustainability within their managerial decisions and daily operations. While corporate executives try to manage these expectations, they must also deliver on their fiduciary duty to shareholders and maximize profits. Therefore, firm managers need to be pragmatic when making corporate sustainability commitments. This business challenge leads to the following research questions: Do corporate sustainability practices affect the financial performance of firms? If yes, is this impact positive or negative?

The review of the academic literature on this topic demonstrates that many scholars have attempted to answer these questions through theoretical and empirical studies, yet the research results remain divergent and inconclusive (Al Hawaj and Buallay 2022; Xu et al. 2022). Having

no established consensus on the interaction between corporate sustainability practices and financial performance might discourage firms from fulfilling their sustainability commitments. This, in turn, impairs public efforts to ensure the private sector's support to achieve sustainable development goals, which can only be realized with the involvement of all the players within the economy. Therefore, further research is necessary to better understand this relationship.

Before attempting new research on this topic, it is important to identify reasons behind the divergent results within existing research. The review of relevant literature makes it evident that scholars use different terms to conceptualize corporate sustainability activities, such as corporate social responsibility and corporate sustainability, among others. The use of multiple concepts leads to different measurements of the same variable in the empirical literature and results in mixed findings. To address this conceptualisation issue this article will put forward a conceptual framework, which will explore the origins and evolution of corporate sustainability practices. Next, a theoretical framework will be developed to gather existing views on the relationship between corporate sustainability practices and financial performance. The research aims at providing a starting point for further empirical research of a greater scope to answer the above-mentioned research questions.

CONCEPTUAL FRAMEWORK

Corporate Social Responsibility and Corporate Sustainability

'*Corporate Social Responsibility*' (CSR) and '*Corporate Sustainability*' (CS) are broad and closely related phenomena that are used interchangeably throughout the management literature and highlights non-financial aspects of corporate activity such as social and environmental management issues (Montiel 2008; Sánchez-Teba et al. 2021; Sheehy and Farneti 2021). While each of these terms has multiple definitions and a different conceptual origin, their meanings tend to converge over time within academic literature (Montiel 2008). Although the concept of CSR emerged prior to CS, it has evolved toward CS (Sánchez-Teba et al. 2021). Thus, CSR has come to be viewed as "*a preliminary stage to achieve sustainability*" (Sánchez-Teba et al. 2021, p. 2).

The origin of CSR traces to the 'Berle-Dodd' dialogue on the concept of a corporation in the backdrop of the Great Depression (Berle 1931; Dodd 1932; Weiner 1964). While Berle argued that a firm's managers are in power for shareholders, Dodd stated that firms should serve for improving society. Resultantly, the scholarly discussion on the CSR phenomenon continued and Carroll (1991) introduced the pyramid of CSR. This pyramid has four tiers, and the first one represents financial viability that allows firms to keep contributing to society. The second tier captures corporate responsibility to comply with the law while fulfilling economic obligations. The third tier focuses on ethical mandates that firm managers carry out by operating fairly without harming society. The last tier of the pyramid encompasses philanthropic responsibility, where firms contribute resources to the community and improve the quality of life.

To provide a unifying framework on the definition of CSR, Sheehy (2015) took an epistemological approach and defined it as "*international private business self-regulation*" (p. 627). In other

words, CSR refers to a firm's self-regulatory efforts based on international norms alongwith business strategy (Sheehy and Farneti 2021). To differentiate CSR from CS, Sheehy and Farneti (2021) argued that the former is "*a bottom-up, organisation-driven idea*" whereas the latter is "*a top-down, global policy agenda*" (p. 6).

The concept of CS emerged in the 1970's and was initially focused on determining the role of firms in addressing their environmental impacts (Bansal and Song 2017; Sheehy and Farneti 2021). However, the evolution of this concept has expanded its scope beyond environmental concerns. Notably, Dyllick and Hockerts (2002) defined CS as "*meeting the needs of a firm's direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities etc), without compromising its ability to meet the needs of future stakeholders as well*" (p. 131). Adapted from the concept of sustainable development, this definition of CS refrains from explicitly mentioning the environment and hints at its composite and multifaceted aspect (Hahn and Figge 2011; Sheehy and Farneti 2021).

Considering the convergence between CSR and CS phenomena, 'corporate sustainability practices' will be used as an umbrella term throughout this paper while refering to corporate activity which goes beyond profit maximization while aiming to address social and environmental concerns.

THEORETICAL FRAMEWORK

Neoclassical and Traditionalist Theories

A review of academic literature points out opposing views regarding the relationship between corporate sustainability practices and financial performance. To begin with, neoclassical and traditionalist theories maintain that engaging in corporate sustainability practices negatively affects financial performance (Balabanis, Phillips and Lyall 1998; Friedman 2007). According to neoclassical theories, such as the industrial organization perspective and resource-based view (RBV), a firm's main obligation is maximizing shareholders returns (Wernerfelt 1984; Fowler and Hope 2007). This view enunciates that providing public goods and addressing social and environmental issues is the responsibility of governments and nonprofit organizations. Firms, on the other hand, should efficiently allocate their resources to increase shareholder wealth.

Thus, neoclassical theory views corporate sustainability commitments as a source of competitive disadvantage that leads to the misuse of corporate funds and increased shareholder costs (Friedman 1970; Jensen 2002). This view is also reflected in the trade-off or traditionalist theory, which argues that corporate sustainability practices raise a firm's expenses while reducing profits (Aupperle, Carroll and Hatfield 1985). Yet, neoclassical theory also argues that firms can only maximize profits while abiding by the rules of society stated in law and ethics (Friedman 1970; Sheehy and Farneti 2021). In other words, this theory suggests that firms must work for shareholders without actively funding corporate sustainability activities and avoid harming their community of operation.

Stakeholder and Good Management Theories

Stakeholder theory argues that corporate sustainability practices positively impact financial performance (Buallay et al. 2023). According to this view, satisfying the needs of all stakeholders is crucial for firms to survive as it increases the firm's value and profitability (Donaldson and Preston 1995; Buallay et al. 2023). The term 'stakeholder' refers to "*any group or individual who can affect or is affected by the achievement of a corporation's purpose*" (Freeman, Wicks and Harrison 2007, p. 6). Keynes (1936) specified three categories of stakeholders: shareholders, external stakeholders, such as governments, suppliers, customers, and competitors, and internal stakeholders, such as board of directors, employees, and subsidiaries. Among these groups of stakeholders, a firm's financial performance concerns shareholders the most "*as changes in firm performance influence the perceptions of shareholder value*" (Certo et. al 2024, p. 144)

Firms that attempt to maximize profits by being socially irresponsible prioritize shareholder needs over other stakeholders (Buallay et al. 2023). On the contrary, the stakeholder theory holds that the optimal balance for a firm is to give equal considerations to the needs of all stakeholders (Hasnas 1998). In this regard, sustainability reporting is a useful tool for firms to meet stakeholder expectations (Buallay et al. 2023). In fact, scholars have acknowledged sustainability reports as "*the document par excellence that companies publish for accountability to stakeholders*" (Sánchez-Teba et al. 2021, p. 1). All stakeholders can refer to these reports to evaluate the overall corporate performance (Sheehy and Farneti 2021).

An articulation of the stakeholder theory is a good management theory which explains the increase in a firm's profitability through a good relationship with its key stakeholders (Wernerfelt 1984; Waddock and Graves 1997; Buallay et al. 2021). Such good relationship management builds a valuable reputation for firms. This reputation protects firms in times of crisis, ultimately giving them a competitive advantage (Barnett and Salomon 2006). Additionally, corporate reputation theory supports this argument by stating that reputation capital builds a bridge between social activities and shareholder value (Godfrey, Merrill and Hansen 2009). Overall, good management theory views corporate sustainability as an 'intangible asset' leading to efficient resource allocation (Buallay et al. 2021, p. 750).

Agency Theory

Agency theory depicts the relationship between a firm's shareholders and managers as a principal-agent relationship (Holmstrom 1979; Jensen and Meckling 1976). This theory views the responsibility of managers (agent) as maximizing the wealth of shareholders (principal) (Quinn and Jones 1995). Managers are interested in maximizing profits to receive compensation in return. On the other hand, shareholders are not only interested in strong financial performance but also reducing risks in the long-term (Buallay et al. 2023). Agency conflicts arise when there is a misalignment between the interests of these actors (Li and Qian 2013). Agency costs, such as transaction and information costs, exacerbate agency conflicts (Buallay et al. 2023).

Conversely, sustainability reporting decreases information asymmetry by disclosing these risks that are not captured solely through financial reporting (Buallay et al. 2023). Therefore, agency theory sees sustainability reporting as a mechanism that helps to increase financial performance by reducing agency costs (Buallay et al. 2023). Yet, the agent-principal view also maintains that a firm's social performance level must be set "*as the minimum needed to achieve the desired goal of maximizing shareholders' wealth*" to avoid damaging corporate value (Buallay et al. 2021, p. 749). Therefore, agency theory assesses the effect of corporate sustainability practices on financial performance in a more nuanced way by acknowledging that this relationship can change based on the amount of corporate resources devoted to corporate sustainability.

Slack Resources and Virtuous Circle Theories

This theory espouses that firms invest in corporate sustainability practices after having accumulated slack resources, which requires strong financial performance (McGuire, Sundgren and Schneeweis 1988). In other words, slack resources theory suggests that firms can be "*doing good by doing well*" (Waddock and Graves 1997, p. 312). High financial returns and low risks allow firms to afford implementing corporate sustainability commitments compared to firms with lower returns and higher risks (Weber 2017). In turn, improved corporate sustainability leads to a better reputation, reduced expenses, and increased profits as discussed above. Consequently, investing in corporate sustainability further improves the financial performance of firms. This implies a bi-directional causality or virtuous circle formed by the interaction between corporate sustainability and financial performance (Waddock and Graves 1997). Therefore, corporate sustainability represents a competitive advantage, not a disadvantage, for firms (Waddock and Graves 1997).

CONCLUSION

This article provides a conceptual and theoretical framework for future empirical research to investigate the interaction between corporate sustainability practices and financial performance. The review of the academic literature on this topic addressed the research questions of whether engaging in corporate sustainability affects the financial performance of firms, and if it does, whether this impact is positive or negative. The conceptual framework highlighted that scholars have been using 'corporate social responsibility' and 'corporate sustainability' terms interchangeably. However, each term has a different conceptual origin and evolution process. The concept of CSR emerged before the CS phenomenon and mainly concerned social issues. On the other hand, CS referred to corporate efforts to address firms' environmental impacts. Over time, CSR has evolved toward CS, while scholars have started to use CS beyond the scope of corporate environmental management. Considering the evolution of both these terms and their convergence in conceptualization, this article used 'corporate sustainability practices' as an umbrella term to encompass non-financial activities of firms to handle both social and environmental issues.

The theoretical framework of this article captured different views on the relationship between corporate sustainability practices and financial performance. These views include neoclassical and traditionalist theory, stakeholder and good management theories, agency theory, and slack recourses and virtuous circle theories. To begin with, neoclassical theory argues that corporate

sustainability practices negatively affects a firm's financial performance by increasing expenses and reducing profits. Conversely, stakeholder and good management theories argue for a positive impact. According to this view, sustainability reporting results in a good relationship with all stakeholders, which leads to a better reputation and creates a competitive advantage for firms. On the other hand, agency theory takes a more nuanced approach toward this relationship by highlighting that the level of corporate funds devoted to sustainability commitments determines the sign of this impact. In addition, slack resources theory argues that firms need a solid financial performance to afford corporate sustainability commitments. High financial performance creates slack resources, which boosts corporate sustainability performance. Lastly, virtuous cycle theory maintains that there is a bi-directional causality between corporate sustainability practices and financial performance. While strong financial performance makes corporate sustainability activities viable, these activities further improve financial performance by reducing costs and increasing profitability.

BIBLIOGRAPHY

1. Al Hawaj, A. Y. & Buallay, A. M. (2022) A worldwide sectorial analysis of sustainability reporting and its impact on firm performance. *Journal of Sustainable Finance & Investment*, 12(1), pp. 62-86.

2. Aupperle, K. E., Carroll, A. B. & Hatfield, J. D. (1985) An empirical examination of the relationship between corporate social responsibility and profitability. *Academy of Management Journal,* 28(2), pp.446-463.

3. Balabanis, G., Phillips, H. C. & Lyall, J. (1998) Corporate social responsibility and economic performance in the top British companies: Are they linked?. *European Business Review,* 98(1), pp.25-44.

4. Bansal, P. & Song, H. C. (2017) Similar but not the same: Differentiating corporate sustainability from corporate responsibility. *The Academy of Management Annals*, 11(1), pp.105-149.

5. Barnett, M. L. & Salomon, R. M. (2006) Beyond dichotomy: The curvilinear relationship between social responsibility and financial performance. *Strategic Management Journal,* 27(11), pp.1101-1122.

6. Berle, A.A. (1931) Corporate powers as powers in trust. *Harvard Law Review*, 44, pp.1049-1074.

7. Buallay, A.M., Al Marri, M., Nasrallah, N., Hamdan, A., Barone, E. & Zureigat, Q. (2023) Sustainability reporting in banking and financial services sector: A regional analysis. *Journal of Sustainable Finance & Investment,* 13(1), pp.776-801.

8. Buallay, A., Fadel, S. M., Alajmi, J. & Saudagaran, S. (2021) Sustainability reporting and bank performance after financial crisis: Evidence from developed and developing countries. *Competitiveness Review*, 31(4), pp.747-770.

9. Carroll, A.B. (1991) The pyramid of social corporate responsibility: Toward the moral management of organizational stakeholders. *Business Horizons*, 34(4), pp.39-48.

10. Certo, S. T., Jeon, C., Raney, K. & Lee, W. (2024) Measuring what matters: Assessing how executives reference firm performance in corporate filings. *Organizational Research Methods*, 27(1), pp.140-166. https://doi.org/10.1177/10944281221125160

11. Dodd, E. M. (1932) For whom are corporate managers trustees?. *Harvard Law Review*, 45, pp.1145-1163.

12. Donaldson, T. & Preston, L. E. (1995) The stakeholder theory of the corporation: Concepts, evidence, and implications. *The Academy of Management Review,* 20(1), pp.65-91.

13. Dyllick, T. & Hockerts, K. (2002) Beyond the business case for corporate sustainability. *Business Strategy and the Environment*, 11(2), pp.130-141.

14. Fowler, S. J. & Hope, C. (2007) Incorporating sustainable business practices into company strategy. *Business Strategy and the Environment,* 16(1), pp.26-38.

15. Freeman, R. E., Wicks, A. C. & Harrison, J. S. (2007) Managing for Stakeholders: Survival, Reputation, and Success. Yale University Press.

16. Friedman, M. (1970) The social responsibility of business is to increase its profits. *New York Times Magazine*, pp.122-126.

17. Friedman, M. (2007) 'The social responsibility of business is to increase its profits', in WC Zimmerli, M Holzinger, & K Richter (eds.), *Corporate ethics and corporate governance* (pp. 173-178). Springer, Berlin.

18. Godfrey, P. C., Merrill, C. B. & Hansen, J. M. (2009) The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic Management Journal,* 30(4), pp.425-445.

19. Hahn, T. & Figge, F. (2011) Beyond the bounded instrumentality in current corporate sustainability research: Toward an inclusive notion of profitability. *Journal of Business Ethics*, 104, pp.325-345.

20. Hasnas, J. (1998) The normative theories of business ethics: A guide for the perplexed. *Business Ethics Quarterly*, 8(1), pp.19-42.

21. Holmstrom, B. (1979) Moral hazard and observability. *The Bell Journal of Economics,* 10(1), pp.74-91.

22. Jensen, M.C. (2002) Value maximization, stakeholder theory, and the corporate objective function. *Business Ethics Quarterly,* 12(2), pp.235-256.

23. Jensen, M.C. & Meckling, W.H. (1976) Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics,* 3(4), pp.305-360.

24. Keynes, J. M. (1936) The General Theory of Employment, Interest and Money. London.

25. Li, J. & Qian C. (2013) Principal-principal conflicts under weak institutions: A study of corporate takeovers in China. *Strategic Management Journal,* 34(4), pp.498-508.

26. McGuire, J. B., Sundgren, A. & Schneeweis, T. (1988) Corporate social responsibility and firm financial performance. *Academy of Management Journal*, 31(4), pp.854-872.

27. Montiel, I. (2008) Corporate social responsibility and corporate sustainability: Separate pasts, common futures. *Organization & Environment*, 21(3), pp. 245-269. https://doi.org/10.1177/1086026608321329

28. Perrini, F., Russo, A., Tencati, A. & Vurro, C. (2011) Deconstructing the relationship between corporate social and financial performance. *Journal of Business Ethics,* 102(1), pp.59-76.

29. Quinn, D. P. & Jones, T. M. (1995) An agent morality view of business policy. *Academy of Management Review,* 20(1), pp.22-42.

30. Sánchez-Teba, E. M., Benítez-Márquez, M. D., Bermúdez-González, G. & Luna-Pereira, M. d. M. (2021) Mapping the knowledge of CSR and sustainability. *Sustainability*, 13(18), 10106. https://doi.org/10.3390/su131810106

31. Sheehy, B. (2015) Defining CSR: Problems and solutions. *Journal of Business Ethics,* 131, pp.625-648. https://doi.org/10.1007/s10551-014-2281-x

32. Sheehy, B. & Farneti, F. (2021) Corporate social responsibility, sustainability, sustainable development and corporate sustainability: What is the difference, and does it matter? *Sustainability*, 13(11), 5965. https://doi.org/10.3390/su13115965

33. Waddock, S. A. & Graves, S. B. (1997) The corporate social performance–financial performance link. *Strategic Management Journal,* 18(4), pp.303-319.

34. Weber, O. (2017) Corporate sustainability and financial performance of Chinese banks. *Sustainability Accounting, Management and Policy Journal*, 8(3), pp.358-385.

35. Weiner, J. L. (1964) The Berle-Dodd dialogue on the concept of the corporation. *Columbia Law Review*, 64(8), pp.1458-1467. https://doi.org/10.2307/1120768

36. Wernerfelt, B. (1984) A resource-based view of the firm. *Strategic Management Journal*, 5(2), pp.171-180.

37. Xu, Z., Hou, W., Main, B.G.M. & Ding, R. (2022) The impact of ESG on financial performance: A revisit with a regression discontinuity approach. *Carbon Neutrality,* 1(30).

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FROM SUSTAINABILITY REPORTING TO ENVIRONMENTAL PROFIT AND LOSS: A CASE STUDY OF PUMA AND KERING

Alain Berger

ABSTRACT: *This paper is an analysis of the environmental profit and loss (E P&L) accounts from two European firms, Puma and Kering. It starts by describing the purpose of an E P&L, its objectives and its limits. The paper then talks about the PricewaterhouseCoopers (PwC) methodology, a methodology which has been instrumental at preparing both E P&Ls. It also provides a discussion on the global reporting initiative (GRI), an key organization in the sustainability discussion. This organization indeed provides the world's most widely used standards for sustainability reporting.*

Later, the paper moves to the two case studies, Puma and Kering. In both cases, findings are discussed. In addition, the paper also shows how to monetize the environmental impact a firm may have on society, and shows some of the limits of the sustainability reporting. Within the widespread discussions taking place around global warming, this paper offers a methodology that society would be better off implementing to make progress in this direction.

KEYWORDS: Puma, Kering, GRI, E P & Ls, PwC, sustainability, environmental impact, methodology.

In 2011, Puma, one of a world's leading Sportlifestyle companies that designs and develops footwear, apparel and accessories, issued the first Environmental Profit and Loss account (E P&L). The company is committed to be the world's most desirable and sustainable Sportlifestyle company.

In this report, Jochen Zeitz, the former CEO of Puma, explains the reasons of developing this first E P&L. By the end of 2009, he says that the firm had to take the next step and demonstrate business as a force for better, and that to become a truly sustainable business, the firm had to address the cost of its business to nature and value it accordingly. Zeitz realized that never before had a company accounted for and integrated the immense value – the true cost – of these services provided by nature such as fresh water, clean air, healthy biodiversity and productive land – concluding that all businesses depend on these (Puma E P&L 2010).

Zeitz says that he wanted to know how much his firm would need to pay for the services nature provides. He also wanted to know how much compensation he would have to provide if nature was

asking to be paid for the impact done through his firm's manufacturing process and operations, and the simple question he did put forward was - if our planet was a business, how much would it ask to be paid for the services it provides to a company in order to operate (Puma E P&L 2010)?

The first ever published Environmental Profit and Loss account focused first on Puma's greenhouse gas emissions and water usage, later adding land use, air pollutants and waste throughout Puma's operations and supply chain. The total results revealed, that if Puma treated the planet as it treats any other service provider, it would have to pay EUR 8 million to nature for services rendered to its core operations such as Puma offices, warehouses and stores in 2010, alone. An additional EUR 137 million would be owed to nature from Puma's supply chain of external partners that are shared with numerous other companies, and where the firm has less influence. So if Puma is to successfully reduce its environmental impact, it has to address the activities of its supply chain partners that generate 94% of its total environmental impact. While the firm recognizes that this is its responsibility, it is at the same time the responsibility of numerous other companies. In order to make a real change Puma, along with its industry peers, has to collaborate and work responsibly to help reduce the impacts of external supplier factories and raw material producers at least to a point where nature can recover rather than being depleted further, resulting in environmental damages that cannot be undone (Puma E P&L 2010).

In this 2010 E P&L, Puma says that placing a monetary value on its impacts - on natural services - has helped to illustrate the potentially negative impact depleted ecosystems can have on a business' future performance. It is common practice in the corporate world that this 'inherent' value of nature is not defined and integrated into a company's accounting. Some corporations believe that businesses solely rely on financials and are driven by their "bottom lines". However, even those concerned only about bottom lines - and not the fate of nature - must now begin to realize that the sustainability of business itself depends on the long-term availability of natural capital (Puma E P&L 2010).

WHAT IS AN E P&L ?

An Environmental Profit & Loss Account is a means of placing a monetary value on the environmental impacts along the entire supply chain of a given business. The E P&L measures and values both reductions in ecosystem services (the benefits that people and businesses derive from nature, like food, fibre, fuel, regulation of climate, assimilation of waste, opportunities for recreation, protection from extreme events, and cultural and spiritual enrichment) and increases in environmental impacts (a change in the make-up, functioning, or appearance of the environment) which occur as a result of a firm's operational and supply chain activities. For example, greenhouse gases (GHGs) contribute to climate change which is associated with a range of environmental impacts such as reduced crop yields, changes in water availability and increases in extreme weather. Waste disposal results in GHG emissions as well as environmental impacts from leachate which can affect water courses and local disamenity impacts caused by dust, noise and odour. All business operations and supply chains depend on nature for services such as fresh water, clean air, healthy biodiversity and productive land. A firm's E P&L is a serious attempt to measure the immense value of these services to a business, and the true costs of a business's impacts on nature (Puma E P&L 2010).

Though Puma pays fees to local authorities for services such as the treatment and supply of water, or the disposal of waste, the true costs of the environmental impacts remain externalized and unaccounted for. The E P&L represents how much a firm would need to pay for the impacts it causes and the services nature provides that enable it, in the case of Puma, to produce, market and distribute footwear, apparel and accessories made of leather, cotton, rubber or synthetics. Providing goods and services will always have some impact on the environment. The challenge for a firm is to reduce its impact on the environment (the 'loss' in an E P&L) as far as possible while continuing to deliver value to its customers and investors, and at the same time look for ways to return value to the environment (Puma E P&L 2010).

In the case of Puma, the firm developed an E P&L in order to quantify and monetize the environmental externalities. Puma also recognized the importance of developing a practical approach for businesses to integrate natural capital into accounting and decision making and to tackle the challenge of the economic invisibility of nature. Puma believe that the current economic model, which originated in the industrial revolution some 100 years ago, is no longer viable and must give way to a new business paradigm, one that works with nature rather than against it. As businesses, firms should account for and, ultimately, pay for the cost to nature of doing business. These costs do not currently hit the financial bottom line, but could easily do so in the future, for example, as a result of new government policy, environmental activism, consumer demand, growing scarcity of raw materials, or as a direct consequence of escalating environmental degradation. In the case of Puma, the E P&L is designed to help identify and manage these risks, while simultaneously sharpening its focus in pursuit of new and sustainable business opportunities. Ultimately, the E P&L will enable the firm to make better, more informed business decisions that take account of environmental impacts as well as more traditional financial and operational considerations (Puma E P&L 2010).

Few research questions can be developed here:

- Is the E P&L account adding value to businesses and society?

- Is the E P&L only an additional intellectual useless thinking tool, as the true environmental cost of firms can be externalized and as a consequence not impacting the financial profit and loss account?

- Can an E P&L simplified methodology to estimating the environmental costs of a firm be addressed and replicated to any other firm?

THE PRICEWATERHOUSECOOPERS (PWC) METHODOLOGY

Having worked with Puma on the issuance of the first E P&L in 2011, PwC published in 2015 a paper summarizing the methodology to develop E P&Ls (Valuing Corporate Environmental Impacts, 2015). The firm says that, due to a growing population, decreasing stock of raw materials and increasingly fragile natural environment, the world people live in by now, is changing. They add that business models of today are not equipped to deal with these changes, and that the way businesses operate in the future will need to be transformed (Valuing Corporate Environmental Impacts, 2015).

In addition, PwC emphasizes that, while there is an understandable desire for growth – to lift people from poverty, create jobs and improve well-being, there is also a growing recognition that society needs the right kind of growth – good growth that is real, responsible inclusive and lasting. From a responsible business perspective, this means considering the broader environmental, social, economic and fiscal impacts on stakeholders, beyond just shareholders, and making business decisions which optimize the impacts, while continuing to grow shareholder returns. Key among these are business impacts on the environment (on natural capital) and the consequences of these impacts for human well-being, many of which are not currently reflected in market prices (Valuing Corporate Environmental Impacts, 2015).

To achieve these objectives, PwC considers that the Environmental Profit & Loss (E P&L) is a tool which businesses can use to value these impacts on current and future populations (Valuing Corporate Environmental Impacts, 2015).

Ever since Puma published the world's first Environmental Profit & Loss account in 2010, E P&L has become a common shorthand for exercises which seek to estimate the value of environmental impacts associated with corporate activities. PwC provided their methodologies to Puma in 2010, and it believes that E P&L results based on their methodologies deliver these attributes, i.e. an E P&L which provides more useful insight into environmental impacts than would otherwise exist, an insight which is credible and easily understood by decision-makers, timely, practical to produce and actionable for many potential applications (Valuing Corporate Environmental Impacts, 2015).

Planet and business

To the question to know why firms should value corporate environmental impacts, PwC sees two reasons: i) for the good of the planet, and ii) for the good of business.

On the planet side, PwC says that, when the economic rules that govern private companies were first defined, economies were insignificant in relation to the seemingly limitless biosphere. Today that situation has changed; economies have grown and now demand vast quantities of resources (Figure 1).

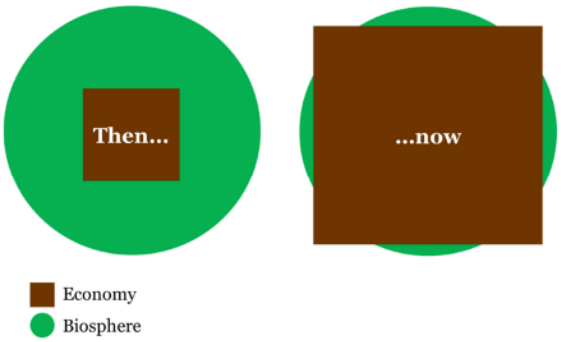

Figure 1: The changing relationship between the economy and the biosphere

According to several scientific analyzes, the planet has already exceeded key ecological limits and is operating beyond its carrying capacity. In today's economic system, some environmental impacts are 'externalized' by companies – meaning that they affect society at large rather than those directly involved in the company's value chain. Putting a monetary value on these environmental impacts allows companies to take them into account in their decision-making and thus enables them to deliver better outcomes for the environment and society (Valuing Corporate Environmental Impacts, 2015).

On the business side, PwC says that, although some business models already deliver environmental benefits hand-in-hand with shareholder returns, on balance however, the environmental impacts associated with corporate value chains tend to be negative.

At present, government policies do not always oblige companies to 'internalize externalities', but a range of factors are creating more pressure for them to do so. In most developed economies, clean air and water laws mean that companies (and ultimately consumers) already pay for some of the costs of pollution; but increasing focus on enforcement coupled with new legislation in emerging economies and growing employee awareness are adding to these costs.

Consumer pressure in relation to environmentally harmful products and production methods continues to drive changes in manufacturing and sourcing strategies. Local communities have successfully sued major corporations for unlawful dumping of waste, and shareholder attention has been raised by high profile environmental incidents and the associated compensation costs and punitive damages. Increasing incidence of droughts, floods, soil erosion and pests have caused disruption to operations and price volatility in agricultural commodities – imposing some of the costs of environmental decline onto company balance sheets and income statements.

PwC adds that, while these drivers are becoming more acute over time, few of the costs estimated in an EP&L will currently hit the company's bottom line, but they actually are strong indicators of future risks (Valuing Corporate Environmental Impacts, 2015).

Valuing corporate environmental impacts

PwC sees three steps to estimating the scale of corporate environmental impacts (figure 2).

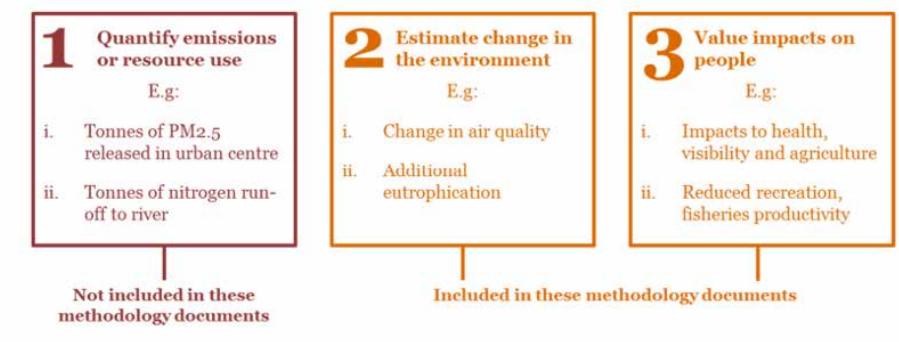

Figure 2: Three steps to estimating and valuing impacts

1. The first step is to quantify environmental emissions or resource-use in biophysical units (kilograms, liters, hectares etc.);
2. The second step is to understand how the corporate emissions or resource-use cause changes in the natural environment;
3. The final step is to value the impacts on people associated with these changes in the environment.

Traditional environmental reporting typically stops at the first step, providing an understanding of the magnitude of emissions and resource use, such emissions being usually calculated and reported through the sustainability reports of the firms. The E P&L goes further, to also consider the consequences of these emissions and resource use for the environment and people, and to value the costs of these emissions.

It appears important to mention that there is a wide range of methods that exist to measure or estimate biophysical quantities of emissions or resource use, and such methods may be reliable on assumptions and models which can be discussed and argued by different participants. Overall, PwC tries to use a set of basic methodological principles which should be, among others, complete, consistent, location specific and transparent. However, they admit that none of the valuation methodologies are perfect, and that, as the use of E P&L as a tool continues to evolve, its suitability to inform specific business decisions still needs to be evaluated on a case by case basis (Valuing Corporate Environmental Impacts, 2015). This paper will however rely on this PwC methodology as much as possible to analyze the two business cases.

THE GLOBAL REPORTING INITIATIVE (GRI)

GRI is an independent, international organization that helps businesses and other organizations take responsibility for their impacts, by providing a common language to communicate those impacts. It provides the world's most widely used standards for sustainability reporting – the GRI standards. The organization was founded in 1997 in Boston (USA), and it has now a very global presence. Over time, the standards have been evolving so as to reflect and integrate the most up-to-date level of research. It allows firms to determine which areas of sustainability they want to report in providing a framework for this (GRI website, accesses on September 20, 2022).

GRI is by far not the only sustainability reporting organization available to firms, but it has become a leading one over the last 20 years for reporting sustainability information. Every year more and more firms adopt the GRI standards as a sustainability reporting standard. The standards are mainly split into three categories, i.e. i) economic impact, ii) environmental impact and iii) social impact. Reporting is still mainly done on a voluntarily basis, and GRI provides an interesting framework to help firms report on non-financial aspects.

Over time, other organizations have emerged in the sustainability discussion, whether to guide firms in their sustainability search or as consultants or advisors, among which the United Nations Sustainable Development Goals, the Carbon Disclosure Project, RobecoSam, a leading firm synonymous with sustainable investing, the Dow Jones Sustainability Index (rated in 2012 and 2013 as the most familiar and second most credible rating to experts, after the Carbon Disclosure Project), the FTSE4Good Index and the KLD database, now part of MSCI ESG indices.

Interestingly, as companies started to increase reporting on their CSR activities by the end of the last millennium, there has been in parallel a strong growth in CSR ratings and rankings (Porter and Kramer, 2006). Many companies entered this game, seeing not only a business opportunity but also the possibility to influence the firms' behaviors in their relation to society.
While an increase in the number of rating agencies could at first look to be positive, it appears that it rather increases confusion among observers. Rating companies all use their own rating criteria, in addition to keeping them confidential. For example, the Dow Jones Sustainability Index includes aspects of economic performance in its evaluation and weight customer service almost 50% more heavily than corporate citizenship, while the FTSE4Good Index contains no measures of economic performance or customer service at all. Even when criteria happen to be the same, they are invariably weighted differently in the final scoring (Porter and Kramer, 2006). Again, in this discussion on sustainability, it is important to be aware that there are number of methods to report and to be included into a sustainability database or index, and that the choice linking reported data to the GRI framework is a choice made by the author, as it fills in with some of the above-discussed transparent and practical application for the business cases discussed here.

The choice of GRI is further reinforced by previous research, among others Clarkson et al. (2008), who developed a rating index based on the GRI guidelines. This index, based on the G3 GRI (year 2002) standards, allows to assess the extent of discretionary disclosures in environmental responsibility reports (appendix 1). The framework is organized in such a way that it can easily be traced to the type of environmental emissions issued by the firm, while at the same time providing a good view on the areas a firm needs to work on if it wants to increase its environmental sustainability.

As of the writing of this paper, new standards, the GRI Sustainability Standards, have been developed since 2016. Those are used in the discussion of both business cases.

THE 2010 PUMA'S E P&L

Starting to work on the 2010 E P&L, it appeared that no single methodology was found which could deliver the enterprise and supply-chain-wide view of environmental externalities that Puma sought. The firm appointed PricewaterhouseCoopers (PwC) and Trucost to support the development of such a methodology. Through consultation in the expert community and reviews of current industry and academic publications, Puma concluded that its most significant environmental impacts are greenhouse gas emissions (GHGs), water use, land use, air pollution and waste – it is these impacts which are therefore included in their E P&L (Puma E P&L 2010).

Water use: Water plays a critical role in maintaining all natural systems which underpin life. In Puma's supply chain water is used principally in the production of agricultural products such as cotton, but also to a lesser extent in industrial processes including leather tanning. The extraction of water by business from surface watercourses, groundwater, and collection of rainwater for consumption reduces the amount of water available to others and therefore reduces the benefits society derives from water. Specific impacts are highly location dependent but include reduced availability of water for domestic, industrial or agricultural use, loss of habitat for other species, changes to local climate, and impacts on recreation in and around watercourses (Puma E P&L 2010).

Greenhouse gas emissions: Anthropogenic emissions of carbon dioxide and other greenhouse gases are resulting in changes in the global climate. Puma's emissions arise from the burning of fossils fuels in electricity generation and transport, as well as emissions from land use conversion and cattle rearing (the livestock sector is responsible for 18% of global GHG emissions). As of today, in many parts of the world the impacts of climate change are already being felt, including increased flooding and drought, sea level rise, impacts on crop yields, and more frequent storms. Continuing climate change is clearly expected to increase the severity of these impacts with diverse but significant consequences for societies around the world (Puma E P&L 2010).

Land use conversion: Natural areas, rich with biodiversity, provide essential services to society which regulate the environment, provide goods and services that support livelihoods, offer opportunities for recreation, and provide cultural and spiritual enrichment. The conversion of land associated with the construction and use of buildings and the production of raw materials affects society by making virgin land more scarce and increasingly fragmented, and hence reducing the services that land can provide to society (Puma E P&L 2010).

Other air pollution: Air pollutants include particulates, sulphur dioxide, ammonia, nitrogen oxide, carbon monoxide, and volatile organic compounds (VOCs) and are emitted principally as a result of the burning of fossil fuels, as well as through the drying and processing of timber. These emissions can result in smog and acid rain, with associated impacts on health (particularly respiratory conditions), agricultural production, property, and the acidification of waterways and soils (Puma E P&L 2010).

Waste: Puma's operations and supply chain produces a variety of different hazardous (e.g. dyestuff, adhesives, petroleum products) and non-hazardous (e.g. paper and fabric) waste products. The impacts of waste disposal are dependent on the disposal method. Landfills result in visual disamenity for local populations, greenhouse gas emissions and, if the site is not well managed, the pollution of watercourses through leachate. Incineration also results in some greenhouse gas emissions, and disamenity, along with other types of air pollution (Puma E P&L 2010).

Puma chose to integrate all processes, from production of raw materials, manufacturing process until the point of sale, often called "cradle to gate". Figure 3 represents Puma's most significant global environmental impacts.

Impact	Measurement
Climate change	Tonnes of GHG emissions
Water scarcity	Volume of water used
Loss of biodiversity and ecosystem services	Area of ecosystem converted
Smog and acid rain	Tonnes of particulates, ammonia, sulphur dioxide, nitrogen oxide, volatile organic compounds (VOCs) and carbon monoxide
Leachate and disamenity affects from landfill and incineration of waste	Tonnes of waste to landfill and incineration

Figure 3: Puma's most significant global environmental impacts

Out of these impacts, drivers had to be determined. On the case of Puma, it was done through data sourced from the firm's operations and suppliers where available, as well as being supplemented with modeled data. Many assumptions had to be taken, making such a process very specific and complex, and showing how this process of valuing environmental externalities should be considered being an inexact science. On the case of Puma, a calculation will be performed on the basis of the total group, and the figures calculated will be used to value the environmental impact of some other firms, with the objective to allow to move into a direction which becomes more and more urgent. All financial figures have been determined on the basis of literature review, actual geographical location of Puma's operations as well as the appointment of two firms (one being PricewaterhouseCoopers) for helping the development of this E P&L. It remains though that the challenges and preciseness of the calculations can still be argued, developing this E P&L allowed Puma to focus attention on these environmental issues, integrate the real social cost on the planet and raise some awareness among society on the effects that firms may have on the environmental issues.

PUMA'S 2010 RESULTS

The changes in human welfare which result from Puma's environmental impact are set in monetary terms for the first time in this report. The following two tables show the most important figures. Figure 4 shows the impact in million of euros, per environmental impact and per tier, while figure 5 shows the same results in more traditional metrics (per cubic meters, per tonnes and per hectares).

EUR million	Water use	GHGs	Land use	Other air pollution	Waste	TOTAL	% of total
	33%	33%	25%	7%	2%	100%	
TOTAL	**47**	**47**	**37**	**11**	**3**	**145**	100%
PUMA operations	<1	7	<1	1	<1	8	6%
Tier 1	1	9	<1	1	2	13	9%
Tier 2	4	7	<1	2	1	14	9%
Tier 3	17	7	<1	3	<1	27	19%
Tier 4	25	17	37	4	<1	83	57%

Figure 4: Puma's E P&L 2010 in EUR million

	Water use Million cubic metres	GHGs Tonnes CO_2e ('000)	Land use Hectares ('000)	Other air pollution Tonnes ('000)	Waste Tonnes ('000)
TOTAL	**77.5**	**717.5**	**107.8**	**6.6**	**42.3**
PUMA operations	0.1	110.1	<0.1	0.4	6.5
Tier 1	5.3	131.4	0.3	1.1	21.2
Tier 2	20.3	108.8	0.2	1.0	8.3
Tier 3	18.4	112.7	0.2	1.2	3.3
Tier 4	33.4	254.5	107.1	2.9	3.0

Figure 5: Puma's E P&L 2010 in more traditional metrics, used to generate the monetary values in the 2010 E P&L

Figures 6 and 7 below show the same results in % of total costs. Figure 6 shows the importance of Water, GHG and Land use among the environmental impacts, while figure 7 shows the importance of Tier 4 which includes the preparation of the raw materials used by Puma.

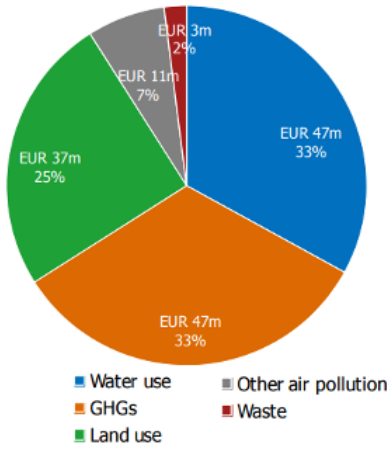

Figure 6: Puma's E P&L 2010 in EUR million, in % per significant environmental impact

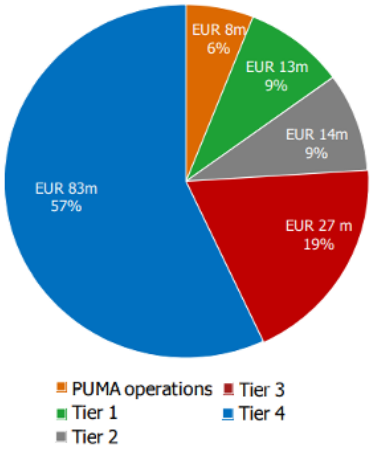

Figure 7: Puma's E P&L 2010 in EUR million, in % per activity break-down

Out of this first Puma's E P&L 2010, it can be drawn some conclusions which, at least, allow to set some basis for a framework to help firms determine the most approximated true cost of their environmental impact.

Table 1 below summarizes some of the findings. The five environmental impacts under analysis, i.e. Water use, GHGs, Land use, Other air pollution and Waste can then be assessed in term of monetization impact.

	Water use Million cubic metres	GHGS Tonnes CO_2e ('000)	Land use Hectares ('000)	Other air pollution Tonnes ('000)	Waste Tonnes ('000)
Total E P&L (Puma and Tiers, Eur million)	Eur 47 million	Eur 47 million	Eur 37 million	Eur 11 million	Eur 3 million
Only Puma operations E P&L (Eur million)	Eur <1 million	Eur 7 million	Eur <1 million	Eur 1 million	Eur <1 million
Total E P&L (Puma and Tiers, traditional metrics)	77.5 million m3	717.5 tonnes	107.8 hectares	6.6 tonnes	42.3 tonnes
Total E P&L (Puma and Tiers, Eur / metric)	Eur 0.6065 / m3	Eur 65.5 / tCO2e	Eur 343.2 / hectare	Eur 1'666.7 / tonne	Eur 70.9 / tonne
For information: Total E P&L (Puma and Tiers, $ / metric)	$0.80/m3	$86.3 / tCO2e	$452.4/hect.	$2'197 / tonne	$93.5 / tonne
Information provided in the Puma E P&L (Eur / metric)	Weighted average Eur 0.81/m3	66 eur / tCO2e (usd 87/tCO2e)	Weighted average Eur 347 / hectare	Between 14'983 and 836 eur / tonne	Weighted average landfill Eur 73 / tonne; incineration Eur 51 / tonne

Table 1: Puma's E P&L 2010 in EUR million, in alternative metrics, in cost/eur, in cost/usd and with corresponding GRI standards

The "Eur / metric" line provides the cost per metric for the 5 different environmental impacts. It can be used as a base to estimate the E P&L on any firm, and to monetize their respective environmental impacts. To find the environment amount issued, a reference to the GRI reports can be done.

Analysis of the 2010 Puma E P&L

An analysis was performed using the 2010 Puma annual report, which includes sustainability data. A link was done with the 2002 GRI Index.

Water use

The firm does not report on total water withdrawal by source, as the GRI disclosure does not relate to Puma's business. Puma is indeed fully aware that the water consumption figures which it reports are unable to cover the full water footprint of its products.

EN8: Total water withdrawal by source.
In 2010, Puma reports an average of 12 m3 of water use per employee. With an average number of employees of 9'313 in 2010, total water use is 111'756 m3. At a cost of water use of Eur 0.6065 (table 1) per m3, total water cost of Puma in 2010 is Eur 67'780.

EN21: Total water discharge by quality and destination. Puma does not report on this indicator in detail as all water from Puma office is discharged to local sewage systems.

The total water use of Eur 67'780 is not the one provided in table 1 above on Puma and Tiers' operations in the E P&L, but rather it can be estimated to be the one reported under Puma operations (E P&L figure of less than Eur 1 million from table 1). Puma itself says that, on a global scale, water usage will in future be covered by the E P&L, and that it will ensure an accurate water footprint and a better evaluation on where water usage is most critical (Puma Annual Report 2010).

Greenhouse Gas
Puma reports on direct CO2 emissions from combustion of fuels, indirect CO2 emissions from electric energy and steam, and CO2 emissions of business travels (43'366 tons CO2), as well as emissions deriving from transport of Puma goods (66'532 tons CO2). Total emission of 109'898 tons CO2, at a cost of Eur 65.5 tCO2 (table 1), represents a cost of Eur 7'198'319. Same comment can be made as for the water above: the Eur 7'198'319 is not the estimated Eur 47 million, however it is the Eur 7 million Puma operations in the E P&L (table 1) (Puma Annual Report 2010).

Land use
On the Land use (biodiversity), no figures are being reported in the 2010 Puma annual report. Some explanations on what Puma tries to achieve in regards to supporting biodiversity. However, this lack of reporting is consistent with the numbers reported on Puma operations, which is below Eur 1 million in the 2010 E P&L. Again, the 2010 Puma annual report includes only figures on land use from Puma operations, excluding the Tiers as described in the E P&L.

Other Air Pollution
The 2010 Puma annual report provides some information on VOC / pair of shoes only, which is 40.2 VOC / pair in 2010. There is no information on the VOC on other categories of products from Puma.

The 2010 Footwear sales represent Eur 1'446.4 million (counting for 50.2% of brand sales), an estimate of the number of shoes sold can be made (estimated to be Eur 75 / shoe)

=> Footwear sales of Eur 1'446.4 million divided by Eur 75 per shoe equals 19.29 million shoes sold
=> VOC = 40.2 ton / pair times 19.29 million shoes equals 775.3 million tons
=> 775.3 million tons times Eur 1'666.7 / ton = Eur 1.3 millions (table 1)

which, once again matches the figure provided in the 2010 E P&L only for Puma Operations (table 1).

Waste
Puma reports average waste of 0.2 tons per employee, representing a total waste of 1'862.6 tons. At a cost of waste of Eur 70.9 / ton (table 1), total cost of waste is Eur 132'058. This amount again matches the figure provided in the 2010 E P&L only for Puma operations (table 1, Eur < 1 million)

Conclusion on Puma's analysis

Overall, the above analysis shows that the figures reported by Puma are essentially focused on Puma's operations, and don't include the various Tiers, such as Manufacturing, Outsourcing, Processing and Raw materials (figure 8). Although the reporting of environmental figures is voluntary, this analysis re-questions the validity of the sustainability reports. It appears that the E P&L represents a more precise process, as it goes more in-depth on the various indirect and true costs impacting the environment.

To note that, while Puma reports some of the figures on a "per piece of pair (of shoes)", it appears difficult to interpret them. Some figures were included in the analysis through estimation, while some others were not integrated in this analysis.

Lastly, it may be interesting to emphasize that the reporting boundaries in the E P&L are estimated to be data from Puma's own operations, subsidiaries and joint ventures (factories), but that the sub-suppliers of those factories are included only where feasible (Puma Annual Report 2010). It re-questions then the validity of traditional sustainability reports.

Figure 8: Puma's operations and the four Tiers (Manufacturing, Outsourcing, Processing and Raw materials)

THE 2013 KERING'S E P&L

Kering, a French luxury group and major shareholder of Puma, also developed E P&Ls since 2013. Already involved in the preparation of the 2010 Puma E P&L, Kering could expand this approach and the methodology to its own firm. Similar to Puma, they broke down their supply chain into different Tiers and calculated the impact of the environmental resources uses. Figure 9 shows the 2013 E P&L by environmental impact type and tier of the supply chain. To mention that Kering worked in 2013 an E P&L only for the luxury brands, while they worked a group E P&L as from 201

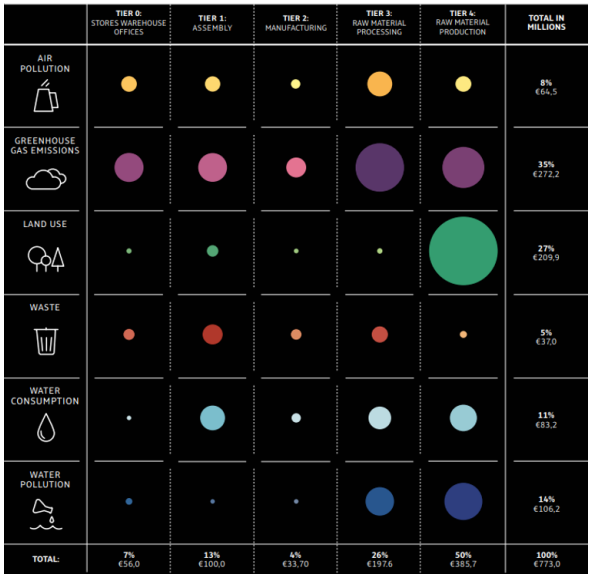

Figure 9: Kering's E P&L 2013 in EUR million, by environmental impact type and tier of the supply chain

Two main changes can be noticed vs. the 2010 Puma E P&L:

1. Kering broke down the environmental impact into six major categories, i.e. Air pollution, Greenhouse gas emissions, Land use, Waste, Water consumption and Water pollution. Following the publication of Puma's 2010 E P&L, considered to be a pilot E P&L for Kering, the firm convened with a group of experts from academia and business with experience in the methodologies underpinning the E P&L to identify areas for improvement. It was decided here to add a sixth impact area, which is the Water pollution (Kering E P&L 2013).

2. This first report did not provide any alternative metrics for these categories, making it difficult to compare the figures with those of Puma. An example (figure 10) is however provided, allowing to estimate some figures during the process. This example remains however purely as an illustration.

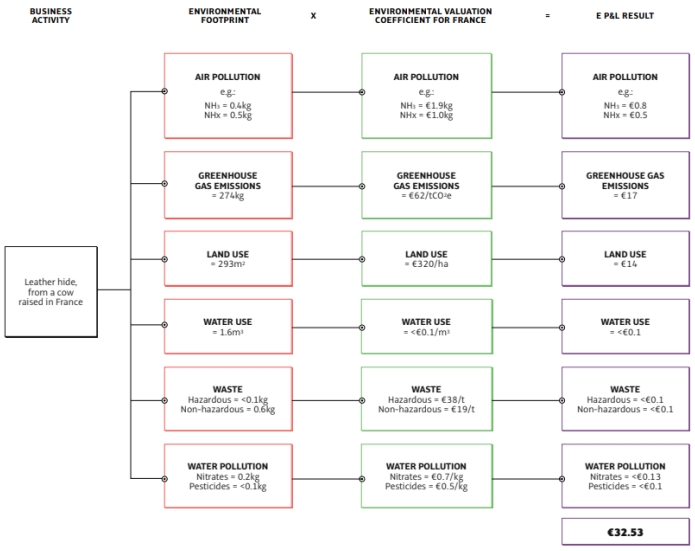

Figure 10: Worked calculation for electricity use by an italian tannery

Figure 11 shows the measurement and valuation of the environmental impacts associated with Kering's emissions and resource use, and additionally shows the environmental change implied by the six categories. Most important information from this table can be seen in the last column, showing the change in well-being of society.

	EMISSIONS AND RESOURCE USE	ENVIRONMENTAL CHANGE	CHANGE IN WELLBEING
AIR POLLUTION	Emissions of pollutants ($PM_{2.5}$, PM_{10}, NOx, SOx, VOCs, NH_3) in kg	Increase in concentration of pollution	Respiratory disease, agricultural losses, reduced visability
GREENHOUSE GAS EMISIONS	Emissions of greenhouse gases (CO_2, N_2O, CH_4, CFC's etc) in kg	Climate change	Health impacts, economic losses, change in natural environment
LAND USE	Area of tropical forest, temperate forest, inland wetland etc in hectares	Reduced ecosystem services	Health impacts, economic losses, reduced recreational and cultural benefits
WASTE	Hazardous and non-hazardous waste in kg	Climate change, disamenity and contamination	Reduced enjoyment of local environment, decontamination costs
WATER CONSUMPTION	Water consumption in m^3	Increasing water scarcity	Malnutrition and disease
WATER POLLUTION	Release of specific heavy metals, nutrients, toxic compounds in kg	Reduced water quality	Health impacts, eutrophication, economic losses

Figure 11: Measurement and valuation of environmental impacts associated to Kering's emissions and resource use

Kering E P&L between 2019 and 2021

Figure 12 summarizes the last three years' E P&L by major environmental impact. It is interesting to consider the evolution of the various emissions over the three years. To note that, in 2021, Kering provided for the first time some alternative metrics, allowing readers to consider the true cost per metric for the six major environmental impact. These 2021 figures are used in Table 2 below.

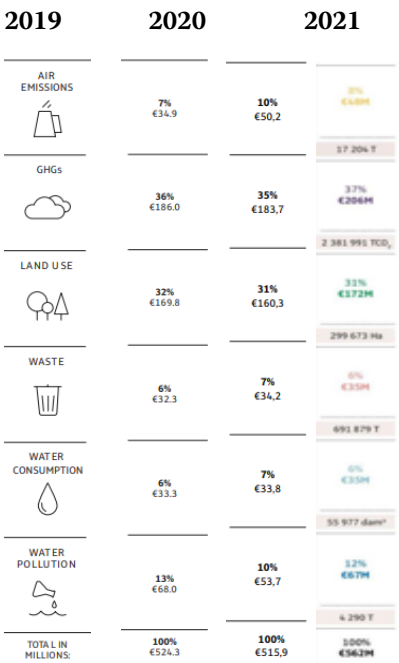

Figure 12: Kering's 2019, 2020 and 2021 E P&L results per major environmental category

Cost per alternative metrics in the 2021 Kering's E P&L

Table 2 below summarizes the 2021 Kering E P&L data per major environmental impact. The highlighted column provides the cost per metric (in euros) for the six different environmental impacts, cost which can be applied to any other firm in case one wants to monetize a firm's environmental impact.

	2021 Total E P&L (eur million)	2021 Total E P&L (alternative metrics)	2021 Total E P&L (eur / metric)
AIR EMISSIONS	48	17'204 T	2'790 eur / T
GHGs	206	2'381'991 TCO_2	86.5 eur / TCO_2
LAND USE	172	299'673 Ha	574 eur / Ha
WASTE	35	691'879 T	50.6 eur / T
WATER CONSUMPTION	35	55'977 dam^3 (= 55'977'000 m3)	0.6253 eur / m3
WATER POLLUTION	67	4'290 T	15'618 eur / T

Table 2: Kering's 2021 E P&L results per major environmental category, per alternative metrics and per cost

Findings on the Kering's E P&L

In spite of a recently adopted European directive (directive 2014/95/EU) on disclosure of non-financial and diversity information by certain large undertakings and groups, Kering does not disclose any specific metrics in regards to water consumption, energy use, etc. It makes it difficult to apply such key indicators and compare them with the E P&L.

At this stage, a reconciliation of both E P&Ls of Puma and Kering is made, at the cost / metric level, is done in table 3, in addition to providing a link to the latest GRI standard (issued as from 2016). It offers a tool box to monetize the environmental costs of any other firm.

	GRI standard	Puma 2010 Cost / metric (eur / metric) (source table 1)	Kering 2021 Cost / metric (eur / metric) (source table 2)
AIR EMISSIONS	GRI 305-7	1'666.7 eur / T	2'790 eur / T
GHGs	GRI 305-1 to 305-6	65.5 eur / TCO_2	86.5 eur / TCO_2
WASTE	GRI 306	70.9 eur / T	50.6 eur / T
WATER CONSUMPTION	GRI 303-1, 303-3, 303-5	0.6065 / m3	0.6253 eur / m3
WATER POLLUTION	GRI 303-2, 303-4	N / A	15'618 eur / T

Table 3: Puma's 2010 and Kering's 2021 E P&Ls figures per metric

DISCUSSION AND LIMITATIONS OF THE STUDY

This paper offers a tool box to readers, in order to prepare and calculate the Environmental Profit & Loss of any firm. It is based on a detailed analysis of the E P&Ls of two firms, Puma and Kering. Making a link between these E P&Ls and more traditional sustainability reports allows for the interpretation of the environmental impacts that firms may have on this earth.

This methodology is not perfect, as every firm is different and has different impacts on the environment. It requires many assumptions, models and approximations. The true cost of environmental impact is indeed very dependent of the activities and the value chain of any firms. However, this methodology is practical and easily applicable. It offers the reader an additional tool to investigate the role of a firm within society keeping the perspectives through "business" eyes.

This paper brings the discussion on environmental sustainability to a next level. It reconciles environmental sustainability disclosure with environmental sustainability performance. Monetizing the environmental impact becomes an important step, especially in regards of the discussions taking place on this earth. This paper also shows the added value and the limits of an E P&L, as well as a method to prepare and interpret it.

From this perspective, this paper is a major step forward.

APPENDIX 1

Index assessing the quality of discretionary disclosures about environmental policies, performance and inputs

Hard disclosure items (max score is 79)

A1 Governance structure and management systems (max score is 6)

1. Existence of a Department for pollution control and/or management positions for environmental management (0-1)
2. Existence of an environmental and/or a public issues committee in the board (0-1)
3. Existence of terms and conditions applicable to suppliers and/or customers regarding environmental practices (0-1)
4. Stakeholder involvement in setting corporate environmental policies (0-1)
5. Implementation of ISO14001 at the plant and/or firm level (0-1)
6. Executive compensation is linked to environmental performance (0-1)

A2 Credibility (max score is 10)

1. Adoption of GRI sustainability reporting guidelines or provision of a CERES report (0-1)
2. Independent verification/assurance about environmental information disclosed in the EP report/web (0-1)
3. Periodic independent verification/audits on environmental performance and/or systems (0-1)
4. Certification of environmental programs by independent agencies (0-1)
5. Product Certification with respect to environmental impact (0-1)

6. External environmental performance awards and/or inclusion in a sustainability index (0-1)
7. Stakeholder involvement in the environmental disclosure process (0-1)
8. Participation in voluntary environmental initiatives endorsed by EPA (Environmental Protection Agency) or Department of Energy (0-1)
9. Participation in industry specific associations/initiatives to improve environmental practices (0-1)

10 Participation in other environmental organization/association to improve environmental practices (if not awarded under 8 or 9) (0-1)

A3 Environmental performance indicators (EPI) (max score is 60)

1. EPl on energy use and/or energy efficiency (0-6)
2. EPI on water use and/or water use efficiency (0-6)
3. EPI on greenhouse gas emissions (0-6)
4. EPl on other air emissions (Nox, Sox) (0-6)
5. EPI on TRI (Toxics Release Inventory) (land, water, air) (0-6)
6. EPl on other discharges, releases and/or spills (not TRI) (0-6)
7. EPI on waste generation and/or management (recycling, re-use, reducing, treatment and disposal) (0-6)
8. EP| on land and resources use, biodiversity and conservation (0-6)
9. EPI on environmental impacts of products and services (0-6)
10. EPI on compliance performance (e.g., exceedances, reportable incidents) (0-6)

A4 Environmental spending (max score is 3)

11. Summary of dollar savings arising from environmental initiatives to the company (0-1)
12. Amount spent on technologies, R&D and/or innovations to enhance environmental performance and/or efficiency (0-1)
13. Amount spent on fines related to environmental issues (0-1)

Appendix 1: Environmental content index (Clarkson et al., 2008)

BIBLIOGRAPHY

1. Clarkson, P.M., Li, Y., Richardson, G.D., & Vasvari, F.P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. Accounting, Organizations and Society, 33(4-5), 303-327

2. Kering's Environmental Profit and Loss Account for the years ended December 31, 2010, 2019, 2020 and 2021, Kering-Environmental-Profit-and-Loss-Report-2021-EN-Only.pdf
3. Porter, M. E., & Kramer, M. R. (2006). Strategy and society – the link between competitive advantage and corporate responsibility. Harvard Business Review, December 2006, 78-92

4. PricewaterhouseCoopers (2015), "Valuing Corporate Environmental Impacts", PwC methodology document

5. Puma's Environmental Profit and Loss Account for the year ended December 31, 2010 (2011), PUMA® - PUMA COMPLETES FIRST ENVIRONMENTAL PROFIT AND LOSS ACCOUNT WHICH VALUES IMPACTS AT € 145 MILLION

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GEOFORENSIC PASSPORT

AN ARTICULATED SUMMARY OF THE PRESENTATION OF PROF. BARBARA BECK AT THE GOLD GOVERNANCE ROUNDTABLE AT THE EU BUSINESS SCHOOL, GENEVA, HELD NOVEMBER 16, 2023

Barbara Beck

Gold is one of the most important metals in the world. It has sustained itself as a crucial commodity of economic value and wealth throughout history while also being a symbol of affluence and power. It continues to be a consequential input in jewellery, technology and even investment resulting in its demand across industries. Gold undergoes many processes to become valuable and return profit to its dealers. As a commodity, the demand for gold has continued to grow over the years. Although it is a precious commodity with good return on investment, it is also associated with human rights violations, environmental concerns and other social issues especially in and around the mining communities. The rising demand for gold further exacerbates these social issues. Consequently, there is a demand to mitigate these social stigmas associated with gold to promote conflict free, ethically mined, and accurate quality assessment of gold ultimately improving the entirety of the gold value chain. This paper provides an overview of gold production chain and highlights some of the social issues that bedevil the industry. It also introduces the concept of "GOLD Passport," as a tool through which these social stigmas could be mitigated.

GENERAL FRAMEWORK

According to the Dodd-Franck ACT, section 1502, all publicly traded companies using conflict minerals must disclose the source. This includes duly tracing and auditing their mineral supply chains ensuring that the raw materials used, are not linked to supporting conflict in member states of the International Conference on the Great Lakes Region (ICGLR), especially the Democratic Republic of Congo. The intention of this act is to enhance the transparency of all financial interests in conflict while dissuading companies from engaging in transactions that could support conflict.

The act serves as a restrictive tool on the importation of conflict minerals in general, as they have to be reported. Minerals can no longer be imported from anywhere in the world, this applies to gold as well.

Another study by Ruggie in 2008 noted that the most serious and massive human rights violation in the world happen in the raw materials and mineral space, of which gold is a major part. The study developed a three pillars framework which are Protect, Respect, Remedy Framework. This vital framework has been adopted by the United Nations Human Rights Council (UNHRC) in 2021 as the guiding principles of Business and Human Rights (Ruggie, 2020). The guiding principles are:

a. The duty of the state to protect against human rights abuse by third parties.
b. The responsibility of the corporates (Businesses) to respect human rights.
c. The duty of the state and businesses to ensure access to remedy for victims of business-related abuses.

GOLD SUPPLY CHAIN

Gold is sourced from two major sources: the industrial mines and the artisanal mines. The industrial mines contribute up to 80% of the refinery-bound gold while the artisanal mines contribute the remaining 20%.

The industrially mined gold is directed to gold refineries around the world such as in Switzerland. The artisanally mined gold takes a different route as it goes through local exporter or an international commercial exchange before it reaches the refineries. The indisputable issue with this type of supply chain includes illegal taxes and mark-ups by the intermediaries before the gold arrives at the refineries. The refined gold is ultimately passed onto jewellers, banks and other final users. This chain is associated with risks such as:

a. Support for armed groups
b. Presence of public security forces for a non-security purpose
c. Corruption
d. False declaration of origin of mineral
e. Due diligence is not respect

At present, the market price of 1kg of gold is about CHF60,000. The price highlights the evidentiary economic value attributed with gold, thus requiring protection and due diligence, throughout its entire value chain.

PRODUCTION OF GOLD AND MINING SITES:

Mining and Mining Sites

Understanding the complete lifecycle of gold, from extraction to refinement and recycling, is crucial for assessing its true value. Using the Amazon basin in Peru as a case study, the gold ores are extracted from mountains where they were deposited. Typically, there are two types of gold deposits: Primary deposits which are gold deposits found in hard rocks; and the secondary deposits which are gold deposits derived from erosion activities, decomposition or disintegration of the encasing rock or overall action of gravity. This secondary deposit is also known as Placer deposit.

The extracted gold usually results majorly in waste products along with a small quantity of gold. The average quality of gold is 2-10 ppm and the average quality of gold in a rock is 0.003 part per million. This means that to get a tiny piece of gold, a massive expanse of earth (rock) must be moved. Compared to other metals like steel, aluminium, copper, the production of Gold generates a large amount of waste which is not reusable due to mercury contamination.

Accessing mines and transporting ores from sites present formidable challenges. Complicated logistics, combined with the absence of global-standard security measures exposes mining sites to a plethora of hazards. Despite these challenging conditions, miners have to employ informal methods to assess the quality and gold content of ore at the site before transporting it.

Concentration of Gold Ore

Miners on site devise a quick separation technique which enables them to isolate the ore from gravels and sand, resulting in a largely homogenous concentration of the ore. This product is then passed onto a charting table that helps to sort the ore into various sizes and weights.

Amalgamation Process

In this process the concentrated ore is further processed through various mechanisms aimed at removing the mercury content of the gold ore. Resulting in Gold (Hg) ore, devoid of mercury or other impurities at a distillation temperature of >350^{0}C.

Cyanidation

This crucial step involves using cyanide solution to dissolve gold from crushed ore. In this process, the gold ore is crushed or grounded to powder and then dissolved in a cyanide solution. The gold is further recovered from the solution, having been detached from the other minerals or matter that carried it.

Refining

Refineries receive gold from two primary sources: mining and recycling. Gold extracted from mines constitutes 20% -80% of the raw material for refineries, whereas recycled gold is notably pure. Through the refining process, gold attains a higher level of purity, reaching up to 99.999%.

Importance of Switzerland in Gold Trade (2021 Data)

PRIMARY SOURCES OF MATERIALS		**REFINING**		**USE**	
Sources	**Quantity**	**SWISS Refinery**	**Quantity**	**Industry**	**Quantity**
Gold mines Recycling	3,516 1,150	**SWISS** Recycle gold Retraining Mined Gold	**1539** 518 662 1021	Jewellery Technology Investment Central Banks OTC and others	2124 – 330 – 1007 – 463 – 1066 –
OTHER COUNTRIES Mined Gold Recycled Gold		**Other Refineries Around the World**	**Quantity**		
		Other Countries Mined Gold Recycled gold	**3127** 2495 632		

According to www.gold.org (2021) and Swiss Import-Export statistics 2021

In the realm of global gold refining, Switzerland plays a pivotal role, with approximately one-third of the world's gold production undergoing melting and processing within the country. Switzerland serves as a central hub for international gold trade, as it handles half of the world's recycled gold. The country is home to five prominent refineries, namely Argor-Heraeus in Ticino, Cendres-Metaux in Bern, MK PAMP in Ticino, Valcambi in Ticino, and Metalor in Neuchatel. These refineries collectively contribute to Switzerland's significant influence in the gold industry.

SOCIAL ISSUES ASSOCIATED WITH GOLD PRODUCTION

Aside from conflict, other significant social issues related to gold production remain neglected. From the environmental perspective, the impact of gold mining bears serious consequences such as in fossil depletion. Fossil depletion is the most critical consequence of gold production. This challenge is far more severe than climate change or urban land occupation, which attracts a lot of attention. Other consequences are human toxicity, marine eco-toxicity. But the critical issue of metal depletion, results in diminishing quality of gold ore quality and thus poses challenges to extracting gold efficiently.

This is not to downgrade the impact of climate changes on global or ecosystem health. Substantial amount of CO2 emissions are emitted through the various production activities along the value chain, like in the case of gold refining in Switzerland. Conversely, human toxicity stems from human interaction with substances like mercury and cyanide, among others.

Furthermore, waste and pollution generated by mining activities impact a vast area of land space, affecting the living conditions of people in the mining communities and its neighbourhood. There is water scarcity, poor sanitation in those neighbourhoods. Besides, severe mine-related accidents are commonplace, which highlights the dangers and hazards related with the industry. These accidents are usually fatal leading to loss of lives. Despite these challenges, mining remains a crucial income source, employing thousands in industrial mines and over a million in artisanal mines. For instance, in Burkina Faso, there are 12 industrial mines which employ about 7,000 people whereas the 200 Artisanal mines provide for about 1.2 million people.

A key strategy to improve these social issues is integrating industrial and artisanal mining methods along with emphasizing standardization and relevant support. This will not only improve the social issues but also improve the efficiency of the artisanal miners, while promoting sustainable practices within the gold mining industry.

GOLD PRODUCTION TRENDS

The demand for gold has consistently grown from time immemorial but it has accelerated in recent years, since the 19th century. This persistent and escalating demand for gold in recent years has resulted in the depletion of gold deposits, amplifying the challenges associated with mining and extraction. The depletion of the gold deposit is a major challenge that should not be overlooked. The imperative to meet market demands at competitive costs highlights the risks of heightened human rights violations, social challenges, and environmental degradation. To address these potential consequences, it becomes crucial to establish the origin of gold through

the implementation of traceability tools. An innovative approach and solution would serve as a mitigating strategy to minimize adverse impacts on human rights, social well-being, and the environment associated with gold production.

REMEDY: TRACEABILITY TOOLS

Based on the aforementioned, it is evident that knowledge of the origin of metals is crucial in the management of both commercial and non-commercial issues related to gold. Traceability is simply the determination of the origin of metals.

The Classical approach which was used until 5-10 years ago was the due diligence method. In this approach the gold was transported in special transports and even controlled in air transits enabling a method of hands-on protection with the relevant documents attached. Then Blockchain technology was involved to further enhance the process ensuring that gold packages are tracked and delivered accordingly.

The limitation of this method was the inability to determine the content and quality of the gold delivered. It could not ascertain the authenticity of the information and the properties recorded for the gold. It could only receive and acknowledge whatever was packaged from the take off point.

Gold Passport

The Geo-forensic passport (Gold Passport) has been developed to trace the origin of gold and to prove that the gold originates only from the declared mines. It would also specify the quality of the gold in terms of properties. This tool makes it possible to have a factual record that is representative of every gram of gold that arrives at the refinery.

The Gold passport is based on the real ingredients of gold which is its chemical composition. Therefore, it can detect anomalies with a high degree of precision, scientifically proven and reliable. By design, it is immune to outright fraud and does not require presence at the mine or in-transit yet allowing for precise journey map from the mine to the refinery.

Importance of Gold Tracing

It is important to know the origin of gold for all the reasons explained above. However, two purposes stand out:

1. It will help to combat environmental degradation and crimes against humanity. It is crucial to be able to identify any person or persons who have committed a crime, and hold them to account, accordingly.
2. It will help to give the mines access to the legal value chain as well as access to financing.

Ultimately, it is in the best interest of the various players in the industry to comply with environmental and social standards and to prosecute non-compliance.

CONCLUSION

The value of gold in various industries, especially finance and luxury, highlight the surging demand for the metal in today's technologically driven world. The demand for the rare metal also is a driver of human rights violations and environmental degradation, including armed conflict in mining regions. Yet the demand continues to grow while the miners also continue to persevere despite the daunting social situation they grapple in their daily lives. With the Dodd-Franck Act and the United Nations guiding principles for business and human rights, the need to integrate industrial and artisanal methods to enhance efficiency, curb social problems and promote sustainable mining is highlighted. The most crucial element to achieve these goals lies in transparency regarding the origin of gold. The Geoforensic Passport is an innovative tool that is designed to precisely determine to origin of gold along with its composition. The Geoforensic passport therefore is a scientific solution that enhances the harmonization of economic viability with sustainability in the gold industry.

BIBLIOGRAPHY

1. Ruggie, J. G. (2020), Chapter 4: The social construction of the UN Guiding Principles on Business and Human Rights. In *Research Handbook on Human Rights and Business*. Cheltenham, UK: Edward Elgar Publishing. Retrieved Jan25,2024. https://doi.org/10.4337/9781786436405.00009

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WHAT MAKES START-UPS MORE APPEALING: THEIR HUMAN CAPITAL OR THEIR CAPITAL STRUCTURE, THE TEAM OR THE BUSINESS? AN ECONOMETRIC APPROACH

Ricardo Torrecilla

ABSTRACT: *We investigate the role played by the human capital of founders and the financing sources in startups, whether they are impactful or just for-profit ventures, in the odds of being accepted in a business accelerator, considering both for-profit and impact-driven programs. In the present investigation, the human capital is composed of three dimensions, namely, educational background, managerial experience, and founding experience, and the same division into three categories also applies to the financing sources: debt, equity, and philanthropy. We use the 2020 GALI Database from Emory University, which features more than 400 business accelerators and over 23,000 team applicants worldwide. Our findings point to the clear dominance of financing sources over to the human capital endowment of entrepreneurs, which suggests that accelerators may endorse banks, business angels, and other external investors' screening criteria over the human capital of the founders.*

KEYWORDS: accelerators, human capital, capital structure, screening criteria.

Accelerators are an innovative funding mechanism that first appeared in 2005 (Fehder & Hochberg, 2014). The knowledge-intensive component of many of the new emerging business models, the dramatic reduction of experimentation costs, and the lean approach in management practices, all of which shorten both the time span and the need for resources to convert a business idea into a minimum viable startup, can be accountable for such rapid expansion ever since.

Business accelerators have already been addressed by scholarship from several different perspectives: Their effect on the treated firms' growth and survival (Del Sarto, Isabelle & Di Minina, 2020), their impact on the chances of raising subsequent financing and on its amount (Regmi, Ahmed & Quinn, 2015), their role in market infrastructure development (Fehder & Hochberg, 2014), their fit along the venture creation pipeline (Yang & Kher, 2018), how they may enhance the reputation of the entrepreneurs (Mansoori, Karlsson & Lundqvist, 2019), or how they may speed up exit through either acquisition or failure (Arora & Nandkumar, 2011). However, there is still a significant knowledge gap regarding the selection criteria in general (Pierrakis & Owen, 2020) considering both the human capital endowment of the entrepreneurs and the financing sources of the firms. We address this gap here.

Accelerator programs are reported to select their cohorts through highly competitive processes (Clarysse, Wright & Hove, 2016). Yet, when shifting the lens to the characteristics of the entrepreneurs and to the financing sources, little has been said except for some references to the education of the founders and to the business growth for those startups raising subsequent follow-on financing after accelerator participation (Lall, Chen & Roberts, 2020), and other qualitative attributes such as strong leadership, commitment, and willingness to learn (Hoffmann & Radojevich-Kelley, 2012).

This knowledge gap opens up opportunities for research. Specifically we inquire whether the skills of entrepreneurs dominate over the capital structure of their startups or vice versa. Who are accelerators betting on, the team or the business?

We conduct a stepwise analysis: As startups are usually ventures not fully fledged, presumably lacking additional signs of quality other than the human capital of their founders (Hsu, 2007), we first focus on the reaction of accelerators in front of the characteristics of the entrepreneurs. However, as scholarship also gives strong support to the financing sources and to their increasing relevance along the entrepreneurial funding cycle (Kaplan, Sensoy & Stromberg, 2009) we test both entrepreneurial skills and funding sources together to unveil which ones prevail in the eyes of accelerator managers.

LITERATURE REVIEW

Signaling Theory, other Views of the Firm, and Human Capital

Signaling Theory focuses on the deliberate emission of positive information, the signal, about the qualities of an organization, a candidate, etc. to help describe the behavior between two parties when informational asymmetry is present, although those signals can even be sent inadvertently. As Spence (1973) illustrated, higher education would signal positively the ability of highly-educated candidates because they succeeded in overcoming the rigors of attaining it rather than because of the intrinsic value of such training. Thus, its widespread presence in the literature should not be a surprise, from the works of Ross (1977) in financial structures to the impact of human capital on entrepreneurial financing (Colombo, 2020), passing through the relationship between human capital and serial entrepreneurship (Amaral, Baptista & Lima, 2011) to name but a few.

The relative importance of teams is consistent with the resource-based view of the firm Penrose (1959), which ranges from defining firms as bundles of resources to state that the human capital is the most important resource for any company, Zingales (2000), being considered the skills of entrepreneurs critical factors for entrepreneurial success (Colombo, Delmastro & Grilli, 2004).
For the purpose of this work, human capital is a construct that comprises three dimensions, namely, educational background, senior managerial experience, and startup experience.

Higher Education
The importance of education may extend to the two phases of entrepreneurship: Opportunity recognition and exploitation (Shane & Venkataraman, 2000). Education seems to have a positive relationship with the foundation of new businesses (Samuelsson & Davidsson, 2009) and with the chances of becoming an entrepreneur (Mackiewicz & Kurczewska, 2020), and it has also been

found to be a relevant factor for both the firm's initial size and for business survival (Colombo, Delmastro & Grilli, 2004). Once within the accelerator sphere, there seems to be a positive correlation between the levels of education and venture creation on the one hand (Peña, 2004), and the amount of follow-on funds raised on the other (Ko & Mckelvie, 2018). Formal education is also believed to enhance the entrepreneur's cognitive abilities even more effectively than other types of human capital: A broader knowledge base would be preferred to past experience (Unger et al., 2011).

Last, intuition in venture investing does also play a role and this is where the educational background of founders may help disentangle the subjective part of the entailed decision-making through the perceived signal of commitment attached to it (Achleitner et al., 2013). Consequently, we hypothesize that:

Hypothesis 1: The effect of higher education within a team will increase the likelihood of being accepted into an accelerator.

Managerial Experience
Prior managerial experience is said to increase the probability of success in entrepreneurship (Staniewski, 2016). Founders with experience in the most senior positions are more likely to IPO and raise more money (Jones, 2020), and seasoned managers are also believed to design better business strategies (Bruhn, Karlan & Schoar, 2010). Conversely, managers with prior managerial experience in not-for-profit organizations only would not be expected to perform well in for-profit environments because they would not be fully aware of the need for financial sustainability (Beaton, 2021).

Similarly, industry-specific experience is positively related to business survival (Shu & Simmons, 2018) and to higher rates of entrepreneurial success (Azoulay et al., 2020). In the same vein, specific experience may have a positive impact on both firm value and performance (Dass et al., 2014) and it is also believed to help innovation, especially in small firms (Balsmeier & Czarnitzki, 2014). However, Samuelsson and Davidsson (2009) claimed that industry experience can be both an asset and a liability depending on whether that experience and the new venture belong to the same sector, and Tian (2011) found that those positive effects could dilute when it comes to managing diversified businesses. Moreover, some of those beneficial effects could be precisely so when specific experience is combined with experience from other sectors within the same entrepreneurial team (Honoré, 2020). Thus, the debate, perhaps, should not be what sort of experience is more important but in which scenario each type would be more effective (Estrin, Mickiewicz & Stephan, 2016). Therefore, despite that there are some arguments that could understate the relevance of managerial experience, we posit that senior managerial experience could ease program admission.

Hypothesis 2: The effect of senior managerial experience within teams will have a positive impact on the likelihood of being accepted into an accelerator.

Founding Experience
Even though some of the necessary skills and knowledge for running a business can be acquired

through formal education (Bruhn, Karlan & Schoar, 2010) it is the experimental nature of startups that has caused previous startup experience to be repeatedly claimed as beneficial to entrepreneurship, providing much of what is needed through learning-by-doing (Lafontaine & Shaw, 2016).

Serial entrepreneurs are those individuals who have founded at least one business before (Amaral, Baptista & Lima, 2011) and their experience may give insight into the internal organization required by a new firm (Delmar & Shane, 2006). Relative to ventures founded by novice entrepreneurs, new firms created by serial founders may have higher chances of survival (Baptista, Karaöz & Mendonça, 2014) along with higher sales and productivity (Shaw & Sorensen, 2019). They may also be more innovative (Vaillant & Lafuente, 2019), and may obtain higher valuations and raise more money in follow-on funding even if their founders' previous experience was unsuccessful (Nahata, 2020).

Conversely, the mere possession of founding experience cannot guarantee the success of the new venture (Ye, 2017). Gottschalk et al. (2014) find serial experience to be unrelated to firm survival, and Nahata (2020) reports that serial entrepreneur-backed companies have lower performance than novice-backed ones. Usually, entrepreneurs rely on heuristics more than the managers of well-established firms do (Shepherd, Williams & Patzelt, 2015) and although heuristics can help in contexts of high uncertainty, serial founders may tilt their decision-making too much towards it in comparison with novice entrepreneurs with the ensuing additional risk due to oversimplification (Ucbasaran et al., 2008). Moreover, even though the presence of behavioral biases does not necessarily have to be negative (Zhang, Bij & Song, 2020), researchers also suggest that serial entrepreneurs may misperceive risk due to both overconfidence and over-optimism (Zhang & Cueto, 2017), which may lead business to underperform.

Consequently, since accelerators usually convey entrepreneurial knowledge mainly through mentors, we argue that programs may be more interested in unexperienced teams, as they would benefit more from an accelerator course than seasoned founders. Previous experience may encumber the transmission of knowledge to some extent because participants might inadvertently be reluctant to accept others' expert advice simply out of inertia. Accordingly, we hypothesize that:

Hypothesis 3: The effect of founding experience within teams will have a negative impact on the likelihood of being accepted into an accelerator.

Signaling Theory, other Views of the Firm and Capital Structure

The accelerator phenomenon may defy to some extent the pecking order proposed by Myers and Majluf (1984) in that the moderate equity infusion in exchange for a stake in the nascent business happens before other types of funding. Likewise, the Financing Growth Cycle (Berger & Udell, 1998) would not fit perfectly either precisely because of that moderate payment, which suggests that program managers may receive signals intense enough to overcome the presumably very high degree of opacity of their prospective investees to sort them out satisfactorily.

As was the case with the human capital of the entrepreneurs, the capital structure is not neutral either. It signals the management of the firm (Ross, 1977, Ko & McKelvie, 2018) and goes far beyond a mere question of cost-effectiveness, especially in the earliest stages of the business cycle because it may have a noticeable impact on the successful development of the business (Cole & Sokolyk, 2013; Hechavarria, Matthews & Reynolds, 2016).

Internal financing
In addition to conveying no informational asymmetries, internal financing is also widely reported as a reliable indicator of the financial health of the business. It is said to increase the flexibility of the management preserving their financial and decision-making autonomy across all the firm's growth stages (Fadil & St-Pierre, 2021) and when understood as one of the ingredients of the bootstrapping mix, it could be a matter of strategic choice rather than a question of pure necessity (Waleczek, Zehren & Flatten, 2018), even postponing the moment until the startup has to resort to outside financing sparing the founders from having to spend too much time courting potential investors instead of taking care of their business (Markova & Petkovska-Mircevska, 2009). Thus, in accordance with the above stated, we hypothesize that cashflow generation, proxied by the revenue figure, will be welcomed by program screeners. Therefore,

Hypothesis 4: A higher volume of the revenue figure will increase the likelihood of being accepted into an accelerator.

Debt
Indebtedness in startups is well documented in the literature and formal debt can even be found in the pre-revenue stage (Ibrahim, 2010). External debt signals positively the firm through the reliability of the expected cashflow stream (Ross, 1977) and tightens the company narrowing the management's leeway for discretionary expenditure (Jensen, 1986). Formal Debt may also accelerate the startup founding process, whether this results in success or ends up in complete failure (Hechavarria, Matthews & Reynolds, 2016). The performance of leveraged startups has proved to be better than that of their unleveraged counterparts (Cole & Sokolyk, 2013) increasing both their growth and survival rates (Hechavarria, Matthews & Reynolds, 2016). Accordingly, accelerators may endorse the screening performed by institutional lenders and also weigh positively leveraged startups because a lower dilution of ownership of their portfolio companies may predispose founders more favorably through a higher valuation when negotiating follow-on equity investment increasing their exit rates (Ibrahim, 2010).

Informal debt, i.e., loans taken out from the founders' family and friends, along with formal debt raised through the pledging of the founders' own assets or from their credit cards, is also reported to have positive effects, particularly on survival rates (Astebro & Bernhardt, 2003). Furthermore, monies from founders themselves signal favorably the business through their message of strong commitment (Conti, Thursby & Rothaermel, 2013). Therefore, we formulate the hypotheses below.

Hypothesis 5a: The presence of formal debt, particularly from banks, will have a noticeable and positive effect on the likelihood of being accepted by an accelerator.

Hypothesis 5b: The presence of informal debt will also have a positive effect on the likelihood of being accepted by an accelerator.

Equity
Roughly 23% of the businesses in our sample had raised equity from for-profit investors at the moment of applying to a program, ranking business angels first, accelerators themselves second, venture capitalists third, plus other investors. As the database gives no information about whether those accelerators invested additional money on top of the modest stipend, we focus just on the other two for economy reasons.

Beginning with business angels there is no such thing as a standardized investment procedure and lone angels and angel groups behave very disparately. Lone angels normally invest in any type of businesses including firms where they might have a personal interest (Fisher et al., 2017) and their approach may have subtle differences depending on their experience. Nevertheless, lone angels, in addition to the personal utility that may derive from meeting entrepreneurs and the thrills of confronting the harshness of market competition, do seek a commensurate return in exchange for the risk borne (Harrison, Mason & Smith, 2015).

On the other hand, angels increasingly organize in groups behaving much like venture capital firms do precluding personal considerations from playing any noticeable role. Group participation in ventures may enhance survival rates and result in more and better exits through larger portfolios and better screening than lone investors with a direct relationship between hours spent on due diligence and returns (Wiltbank & Boeker, 2007).

In contrast, venture capital decision-making is entirely driven by exit potential (Petty & Grubber, 2011). VC involvement is also an important determinant of business success. There seems to be a real treatment effect on the VCs' investees (Bernstein, Giroud & Townsend, 2016), which would not only cash the much-needed capital infusion but would see their team composition enhanced, a better product development, and their business networks extended. Equally important is that VCs usually source their deals through peer networks being desk-rejection the most common reply to unsolicited approaches, which may lead to even finer screening (Hochberg, Ljungqvist & Yang, 2007). Moreover, raising funds from venture capitalists is indeed a rare event, very few applicants achieve it (Robb & Robinson, 2014) and when they do so the business happens to be the reason for acceptance, whereas the management is often cited as the main argumentation for refusal (Petty & Grubber, 2011).

As for inside equity, money invested from the founders' own resources or from their family and friends, reassures the confidence and the commitment of the team with respect to their own business (Prasad, Bruton & Vozikis, 2000). Besides, it also helps convince outside funders because of the sharing of the risk. Consequently, we formulate the hypothesis below:

Hypothesis 6a: The presence of outside equity investors in the startup will have a noticeable and positive impact on the likelihood of being accepted in an accelerator.

Hypothesis 6b: The presence of inside equity investors in the startup will also have a positive effect on the likelihood of being accepted in an accelerator.

Philanthropy
Startups with social intent may find access to financial resources even more difficult than their only-for-profit counterparts (Lall & Jacob, 2020) and what is even worse, raising money from investors with purely financial interests is practically ruled out. They would fear a lack of focus from teams with dual objectives (Scarlata, Zacharakis & Walske, 2016), i.e., the fulfilment of the social mission along with the maximization of the financial return. In contrast, social investors may be worried about mission-drift. Empirical evidence shows, though, that social entrepreneurs would overcome those obstacles through undergoing a multi-layered process in which, in addition to commonly used business screening criteria, their commitment and probity would be further verified (Achleitner et al. 2013).

Interestingly, it is argued that while only-for-profit entrepreneurs need not necessarily be innovative, social startups have to be creative because opportunity-recognition is most times intertwined with past experiences and accrued knowledge, which would trigger the discovery of opportunities hidden otherwise to others with dissimilar backgrounds (Yitshaki & Kropp, 2016). Last, the extant literature has recently found that there is little or no difference between the financial sources of social for-profit ventures and their only-for-profit counterparts (Guo & Peng, 2020).

Consequently, we hold that the endorsement of social investors, either lenders or equity investors, can only be beneficial to businesses, regardless of them being socially driven or not, by virtue of which,

Hypothesis 7: The presence of outside social investors on the capital structure of applicants will cause a significant a positive impact on the likelihood of being accepted into an accelerator.

METHODOLOGICAL APPROACH

Sample and Data

The last version of the 2020 GALI Database from Emory University, last downloaded on 2nd March 2022, features 408 accelerators, split into 168 programs which declared they had an impact division, and 157 only for-profit accelerators. The remaining 83 accelerators with no information about their orientation were dismissed.

As in the database the information on the personal characteristics of team members is restricted to just three people per startup, all the analyses are limited to teams of that size at most. Therefore, after adjustments, our total team count amounts to 16,426 startups: 4,359 solo entrepreneurs, 6,539 two-person teams, and 5,528 three-founder firms out of 23,365 startups in the database.
Applicants self-selected themselves and program screeners didn't conduct their cherry-picking

randomly either. That said, the startups included in the database are highly heterogeneous: More than 150 characteristics are used to depict every venture profile. Moreover, more than 400 programs performed their screening over more than 23,000 firms. Therefore, the potential effects of that double self-selection can be considered negligible.

The GALI database has been used already in other investigations, but in all of them researchers have used smaller subsamples than that of ours according with their focal problems (Pierrakis & Owens, 2020; Lall et al., 2020, Venâncio & Jorge, 2021). Moreover, the debate about the predominance of either the skills of the team or the capital structure as a proxy for the business remains still unresolved. Accordingly, we conduct a stepwise approach. We first address exclusively the role of the three human skills of applicants to attest their relevance per se, regardless of any other considerations. In the second step, we deal with the human capital dimensions and the capital structure of the ventures together.

Variables

The dependent variable is a dichotomous one that features ventures that applied to, were accepted into, and participated in a program. It registers the value of 1 when a startup team has been accepted and participated in a program and the value of 0 otherwise.

Concerning the human capital dimensions, i.e., the education background, senior managerial experience, and founding experience, we use one 5-variable set for the first, a 4-variable set for the second, and another 4-variable set for the last one, for capturing every relevant nuance of the focal dimension. All the variables are described from Table1 to Table 4 below.

Table 1: Human Capital dimensions and their variable set

Dimensions of Human Capital	Subdimensions	Variables
Educational Background	Graduates in the team	Higher Education, binary
	Postgraduates in the team	Postgraduate, binary
	PhDs in the team	PhD, binary
	Schooling years per team	Schooling Years, continuous
	Schooling years / team count	Ratio Education, continuous
Managerial Experience	Managerial experience in the team	Managerial Exp., binary
	Managerial experience in only for-profits	Manag. Exp. F-p, binary
	The majority has managerial experience	Man. Exp. Major., binary
	Business experience in general	Work Experience, binary
Founding Experience	Total number of startups previously founded	Founding Exp., continuous
	Total number of only for-profit startups previously founded	Founding Exp. F-p, cont.
	Total number of startups founded except for-profits	Founding Exp. Other, cont.
	Total number startups per team / team count	Ratio Found. Exp., cont.

Table 2: Capital Structure. Debt financing subdimensions and variables

Debt Variables	Subdimensions & Variables
Family	Debt from the family of founders
Friends & Family	Debt from friends & family of founders
Employees Not Owners	Debt from employees not owners
Other Individuals	Debt from other individuals
Banks	Debt from banks
Non-Bank Fin. Instit.	Debt from other financial institutions
Angel Investors	Debt from business angels
Venture Capitalists	Debt from venture capitalists
Accelerators	Debt from accelerators
Companies	Debt from non-financial firms
Governments	Debt from governmental bodies
Business Plan Compet.	Debt from business plan competitions
Crowdfunding	Debt from crowdfunding
Non-profit Organizat.	Debt from philanthropy
Other Sources	Debt from other Sources

Table 3: Capital Structure. Equity financing dimensions and variables

Equity Variables	Subdimensions & Variables
Spouses	Equity from the spouses of founders
Parents	Equity from the parents of founders
Friends & Family	Equity from friends & family of founders
Employees Not Owners	Equity from employees not owners
Other Individuals	Equity from other individuals
Banks	Equity from banks
Non-Bank Fin. Instit.	Equity from other financial institutions
Angel Investors	Equity from business angels
Venture Capitalists	Equity from venture capitalists
Accelerators	Equity from accelerators
Companies	Equity from non-financial firms
Governments	Equity from governmental bodies
Business Plan Compet.	Equity from business plan competitions
Crowdfunding	Equity from crowdfunding
Non-profit Organizat.	Equity from philanthropy
Other Sources	Equity from other sources
Unknown Sources	Equity from unknown origin

Table 4: Capital Structure. Philanthropic financing subdimensions and variables

Philanthropy Variables	Subdimensions & Variables
Friends & Family	Philanthropy from friends & family
Employees Not Owners	Philanthropy from employees not owners

Other Individuals	Philanthropy from other individuals
Accelerators	Philanthropy from accelerators
Companies	Philanthropy from non-financial firms
Governments	Philanthropy from governmental bodies
Business Plan Comp.	Philanthropy from business plan competitions
Crowdfunding	Philanthropy from crowdfunding
Non-profit Organizat.	Philanthropy from philanthropy
Other Sources	Philanthropy from other sources

We also control for gender, founder age, firm age, region, activity sector, and team size. When controlling for the region where the startup is based, we use the 2022 World Bank Country Classifications by income. When activity sectors are addressed, the original 16 database sector count has been summarized into 7 sectors following affinities from the GICS, Global Industry Classification Standard. Other additional controls are prior participation in another accelerator program, whether the business model of the applicant is invention-based, whether the startup has social or environmental goals, whether the candidate is a for-profit venture or another type of organization, and whether the startup has intent to achieve a certain profit percentage.

Importantly, we didn't choose our selected variables randomly, nor were all the variables in the original dataset tested systematically. Rather, they were elected through conducting comparative analysis between the two subsamples into which the main sample was divided, according to having participated or not in a program. T-tests of equal variances and the Mann-Whitney-Wilcoxon rank sum test (Wooldridge, 2013) were used for assessing their pertinence. Last, all the analyses were conducted using the latest version of the Stata statistical package, StataSE 17 (64-bit).

Model Specification
Given the dichotomous nature of our dependent variable the Probit model is adequate. Probit can be derived from a latent variable model, where Y* is that latent variable and the

$$\mathbf{Y^* = \beta_0 + X\beta + \varepsilon;\ \ Y = 1\ [Y^* > 0].}$$

binary outcome is denoted by Y = 1 when Y* > 0, and Y = 0 when Y* ≤ 0. We chose Profit rather than Logit because in Probit ε behaves according to the Normal Distribution, and because it has a better fit to data in most types of samples (Wooldridge, 2013). Nevertheless, we also used Logit regressions to obtain odds ratios because they can be more easily interpreted than Probit output and as an additional robustness test.

RESULTS

Table 5 portrays the results of the first step in our stepwise approach: Only human capital variables along with controls. The choice of the model below is justified because, out of all the models tested, it was the one which presented the highest explanatory power, i.e., the best Wald Chi squared, Pr>Chi^2, and Pseudo R2 outcomes, along with the highest number of observations.

Table 5: Stepwise approach, step 1. Partial model: Only human capital variables.

	Probit Coefficient	P-Value	Marginal Effect at Means	Logit Odds Ratio
Participated				
I. Human Capital Dimensions				
Higher Education	0.0687	0.106	0.1723	1.125
Postgraduate	0.0722	0.011	0.0181	1.140
PhD	-0.045	0.407	-0.0113	0.922
Work Experience	0.0068	0.043	0.0017	1.012
Founding Exp.	-0.0055	0.296	-0.0014	0.990
II. Controls				
Sector				
Consumer	-0.0727	0.068	-0.0183	0.879
Health	-0.0128	0.801	-0.0033	0.977
Infotech	-0.1444	0.007	-0.0352	0.772
Real Estate	0.0514	0.542	0.0138	1.095
Financial	-0.0396	0.472	-0.0102	0.932
Other	-0.0029	0.948	-0.0007	0.998
Income Region				
Lower-Middle	0.1239	0.033	0.2705	1.261
Upper-Middle	0.2496	0.000	0.0582	1.566
High	0.2546	0.000	0.0596	1.581
Other				
Av. Found. Age	-0.0054	0.006	-0.0014	0.991
Founder Count	0.0184	0.302	0.0046	1.031
Female Count	0.0750	0.000	0.0188	1.144
Target Profit	0.0660	0.015	0.0166	1.124
Startup Age	0.0229	0.000	0.0057	1.040
Invention	-0.0756	0.003	-0.0190	0.875
Accel. Particip.	0.3033	0.000	0.7611	1.693
Social Motives	-0.0260	0.558	-0.0065	0.950
Legal Status	0.1965	0.000	0.0493	1.429
Obs.	14,307			
Wald chi2(22)	194.28			
Prob > chi2	0.0000			
Pseudo R2	0.0148			

The role of human capital turned out to be rather disappointing. The educational background has beneficial effects only when there are postgraduates in the team, with a noticeable effect: When the quality is present, the likelihood of acceptance increases by 14% (odds ratio). Managerial experience was on the boundary of statistical significance but when proxied by general work experience, not senior managerial experience as it was originally intended, and founding experience showed no connection with the odds of acceptance.

The results for the second step in our stepwise approach, i.e., the full model including both human capital dimensions and the capital structure, are shown in Tables 6 and 7.

Table 6: Stepwise approach, step 2. Full model: Human capital dimensions plus capital structure.

	Probit Coefficient	**P-Value**	**Marginal Effect at Means**	**Logit Odds Ratio**
Participated				
I. Human Capital Dimensions				
Higher Education	0.0576	0.172	0.1434	1.101
Postgraduate	0.0428	0.138	0.0107	1.083
PhD	-0.7121	0.196	-0.0177	0.879
Work Experience	0.0080	0.015	0.0020	1.014
Founding Exp.	-0.0301	0.005	-0.0075	0.947
II. Capital Structure Variables				
Debt from Banks	0.2336	0.000	0.0581	1.493
Debt from Angels	0.2905	0.000	0.0722	1.644
Debt from Accel.	0.2602	0.021	0.0647	1.558
Equity from Angels	0.2583	0.000	0.0642	1.562
Equity from Govern.	-0.2136	0.036	-0.0531	0.694
Equity from VC	0.1592	0.021	0.0396	1.320
Equity from Accel.	0.1423	0.029	0.0354	1.279
Equity from F&F	-0.1713	0.003	-0.0426	0.737
Philan. from Gov	0.1087	0.023	0.0270	1.209
Philan. from Non-prof.	0.1589	0.000	0.0395	1.332
II. Controls				
Sector				
Consumer	-0.0770	0.055	-0.0194	0.874
Health	-0.0249	0.629	-0.0064	0.957
Infotech	-0.1389	0.012	-0.3388	0.783
Real Estate	0.0520	0.531	0.0139	1.106
Financial	-0.0908	0.106	-0.0227	0.856
Other	0.0015	0.972	0.0004	1.011
Income Region				
Lower-Middle	0.1218	0.037	0.0269	1.257
Upper-Middle	0.2402	0.000	0.0564	1.542
High	0.2074	0.000	0.0479	1.454
Other				
Av. Found. Age	-0.0049	0.013	-0.0012	0.992
Female Count	0.0823	0.000	0.0205	1.157
Target Profit	0.0591	0.029	0.0015	1.106
Startup Age	0.0168	0.000	0.0042	1.030
Invention-driven	-0.0924	0.000	-0.0230	0.847
Accel. Particip.	0.3096	0.000	0.0770	1.711
Social Motives	-0.0441	0.320	-0.0110	0.922
Legal Status	0.1978	0.000	0.0490	1.442

Table 7: Full model regression descriptive statistics.

Obs.	14,307
Wald chi2(22)	331.25
Prob > chi2	0.0000
Pseudo R2	0.0256

The explanatory power and the fit of the full model are better than those of the partial one, as testified by the regression output and further supported by the Akaike criterion (Lall, Chen & Roberts, 2020).

The first noticeable correction is that postgraduates are now irrelevant and higher education in general and PhDs continue to be so as well. Moreover, when we replace those variables by either the total schooling years or the education ratio, total schooling years divided by team count, results are still the same. Therefore, the introduction of financial variables seems to render education inconsequential. Thereupon, hypothesis 1 is definitively unsupported.

When focusing on managerial skill, work experience remains virtually unaltered. Therefore, hypothesis 2 stays as when only human factors were featured, partly unsupported.

Let us now turn to founding experience. It is always irrelevant except when proxied by experience in any type of organizations except for-profits, it is then negatively regarded, and when we use the ratio between any type of ventures and the founder count. The latter registers also a slightly negative marginal effect-0.75% (a 0.947 odds ratio). Thus, accelerators may dislike teams with too much startup experience, especially is that experience is tinged with a non-profit background, by virtue of which, hypothesis 3 is supported.

Let us now consider capital structure elements. The two proxies for internal financing, revenue from foundation and revenue in the last year, were never statistically significant. Ergo, hypothesis 4 is partly unsupported.

When we direct our attention to debt, inside borrowing is never statistically relevant. However, external debt sources play a decidedly positive role. The odds of acceptance increase when outside debt is present even by 64% (debt from business angels). Accordingly, hypothesis 5a is fully supported, whereas hypothesis 5b is partly unsupported.

Similarly, outside equity funders have always a very positive effect (with the only exception of governmental shareholders) and inside equity is very negatively regarded. Thus, hypothesis 6a and 6b are clearly supported and definitively unsupported, respectively.

As for philanthropic financing, only two sources may cause an impact on the likelihood of entering a program clearly increasing the odds of being accepted being all the others irrelevant. Therefore, hypothesis 7 is fully supported. See Table 8 for a hypothesis validation summary.

Table 8: Full model's hypothesis validation.

Dimension		Hypothesis Validation
Human Capital	**Higher Education**	H1: Unsupported
	Managerial Experience	H2: Partly Unsupported
	Founding Experience	H3: Supported
Capital Structure	**Internal Financing**	H4: Partly Unsupported
	Debt	H5a: Supported H5b: Partly Unsupported
	Equity	H6a: Supported H6b: Unsupported
	Philanthropy	H7: Supported

Interestingly, it is one of the controls the variable that registers the highest positive effect, which is previous participation in an accelerator. This could be consistent with the negative regard to startup experience: Accelerator managers may dislike too experienced entrepreneurs and, consequently, they may positively consider founders who are used to accelerator methodology already. Surprisingly, innovation-driven business models are not welcome.

ROBUSTNESS

Despite the high quality of the data, the base contains many missing observations, which could distort the regressions' output. We have addressed the issue through double sampling: Constructing a second database, which is based on the original one, performing imputation over the censored data using Tobit regressions (Cotei & Farhat, 2017). Once imputation has been carried out, we have conducted again all the regressions performed over the non-imputed database. The results are virtually identical, no variable changes its statistical significance and its effect either, with one single exception which is equity infusions from governments. In the non-imputed regressions, it caused a negative effect. However, when regressing the imputed data, the variable becomes not significant. Therefore, our results are robust.

FINDINGS & DISCUSSION

First, accelerator acceptance is clearly driven by the capital structure over the human capital endowment of founders. The three types of outside financing, namely, debt, equity, and philanthropy register positive and very high effects, which may suggest that accelerator managers would first set their eyes on the prospects of the business rather than in the talent of the startup's promoters. Second, debt dominates over equity, and philanthropy. When accelerators first select startups which display debt on their balance sheets, they clearly bet on a proven ability of that candidate for self-sustainability, the dependability of cashflows for servicing the debt. Otherwise, those businesses wouldn't have raised formal debt. The business of professional lenders isn't about seizing collateral from non-performing loans. Likewise, when programs select firms which showcase outside equity, they endorse the analysis about the prospects of the business carried out by those for-profit investors to some extent, whether they are institutional or amateur. Angel investing isn't about a little money and a little fun whatsoever, not to mention venture capitalists. Last, philanthropic investing also enhances the odds of entering a program since without business sustainability the mission can't be fulfilled unless it is just about charity.

Third, why would a startup which already sourced outside funds apply to a program (roughly 75% of the sample)? This overwhelming percentage suggests that entrepreneurs are willing to pay the high price for the accelerators' value-added services such as mentoring and peer, investor, and industry key stakeholder exposure.

Last, since the database informs only on the sector in which the startups operate but there is no information about their business plans, we maintain that the importance of human capital cannot be completely disregarded. It is the founders who founded those businesses in which professionals decided to invest.

CONTRIBUTIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Since the sample has plenty of startups which already sourced outside financing, no unconditional support to either Pecking Order or to Financing Growth Cycle theories can be granted. However, to the best of our knowledge, the dominance of the business over the human skills has been firstly unveiled for the initial sector in the venture capital pipeline.

However, we would like to point out that thorough startup profiles are still hidden from our current knowledge stock. We still don't know what the combination of human skills, financing sources, and other attributes is preferred by program managers. Further research is being conducted in this line with promising results.

REFERENCES

1. Achleitner, A.-K., Lutz, E., Mayer, J., & Spiess-Knafl, W. (2013). Disentangling Gut Feeling: Assessing the Integrity of Social Entrepreneurs. *International Journal of Voluntary and Nonprofit Organizations,* 24(1), 93–124. https://doi.org/10.1007/s11266-012-9264-2.

2. Amaral, A., Baptista, R., Lima, F. (2011). Serial Entrepreneurship: Impact of Human Capital on Time to Re-entry. *Small Business Economics*, 37(1), 1–21. https://doi.org/10.1007/s11187-009-9232-4.

3. Arora, A., & Nandkumar, A. (2011). Cash-out or flame-out! Opportunity Cost and Entrepreneurial Strategy: Theory and Evidence from the Information Security Industry. *Management Science*, 57(10), 1844–1860. https://doi.org/10.1287/mnsc.1110.1381.

4. Astebro, T., Bernhardt, I. (2003). Start-up financing, owner characteristics, and survival. *Journal of Economics and Business*, 55(4), 303–319. https://doi.org/10.1016/S0148-6195(03)00029-8.

5. Azoulay, P., Jones, B., Kim, J., & Miranda, J. (2020). Age and high-growth entrepreneurship. *American Economic Review: Insights*, 2(1), 65–82. DOI: 10.1257/aeri.20180582.

6. Balsmeier, B., Czarnitzki, D. (2014). How Important is Industry-Specific Managerial Experience for Innovative Firm Performance? ZEW, Centre for European Economic Research. Discussion Paper No. 14-011. Available from https://www.econstor.eu/handle/10419/91726 (Accessed 12th January 2021).

7. Baptista, R., Karaöz, M. & Mendonça, J. (2014) The impact of human capital on the early success of necessity versus opportunity-based entrepreneurs. *Small Business Economics*, 42(4), 831–847. https://doi.org/10.1007/s11187-013-9502-z.

8. Beaton, E.E. (2021). No margin, no mission: How practitioners justify nonprofit managerialization. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 32(), 695–708. https://doi.org/10.1007/s11266-019-00189-2.

9. Berger, A., Udell, G. (1998). The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. *Journal of Banking & Finance*, 22(6-8), 613-673. https://doi.org/10.1016/S0378-4266(98)00038-7.

10. Bernstein, S., Giroud, X., Townsend, R. (2016). The Impact of Venture Capital Monitoring. *The Journal of Finance*, 71(4), 1591-1622. https://doi.org/10.1111/jofi.12370.

11. Bruhn, M., Karlan, D., Schoar, A. (2010). What Capital is Missing in Developing Countries? *American Economic Review*, 100(2), 629–633. DOI: 10.1257/aer.100.2.629.

12. Clarysse, B., Wright, M., Hove, J.V. (2016). A look inside accelerators in the United Kingdom: Building technology businesses. *Technology Entrepreneurship and Business Incubation: Theory, Practice, Lessons Learned*, 57-86. World Scientific Publishing Co. Pte. Ltd.

13. Cole, R.A., Sokolyk, T. (2013). How Do Startup Firms Finance Their Assets? Evidence from the Kauffman Firm Surveys. Working Paper, Depaul University. Available from https://wwws.law.northwestern.edu/researchfaculty/clbe/events/innovation/documents/cole-sokolyk_2013-05-28.pdf (Accessed 7th March 2022).

14. Colombo, O. (2020). The Use of Signals in New-Venture Financing: A Review and Research Agenda. *Journal of Management*, Vol. 47(1), January 2021, pp. 237–259. DOI: 10.1177/0149206320911090.

15. Colombo, M., Delmastro, M., Grilli, L. (2004). Entrepreneurs' Human Capital and the Start-up Size of New Technology-Based Firms. *International Journal of Industrial Organization*, 22(8–9), 1183-1211. https://doi.org/10.1016/j.ijindorg.2004.06.006.

16. Conti, A., Thursby, M., Rothaermel, F. (2013). Show me the Right Stuff: Signals for High-Tech Startups. *Journal of Economics and Management Strategy*, 22(2), 341-364. DOI: 10.1111/gems.2013.22.issue-2.

17. Cotei, C., Farhat, J. (2017). The Evolution of Financing Structure in U.S. Startups. *The Journal of Entrepreneurial Finance*, 19(1), 1-32.

18. Dass, N., Omesh, K., Nanda, V., Onal, B., Wang, J. (2014). Board Expertise: Do Directors from Related Industries Help Bridge the Information Gap? *The Review of Financial Studies*, 27(5), 1533–1592. https://doi.org/10.1093/rfs/hht071.

19. Del Sarto, N., Isabelle, D., Di Minina, A. (2020). The Role of Accelerators in Firm Survival: An fsQCA Analysis of Italian Startups. *Technovation*, 90–91(), 102102. https://doi.org/10.1016/j.technovat ion.2019.102102.

20. Delmar, F., Shane, S. (2006). Does Experience Matter? The effect of founding team experience on the survival and sales of newly founded ventures. *Strategic Organization*, 4(3), 215-247. https://doi.org/10.1177/1476127006066596.

21. Estrin, S., Mickiewicz, T., Stephan, U. (2016). Human Capital in Social and Commercial Entrepreneurship. *Journal of Business Venturing*, 31(), 449-467. https://doi.org/10.1016/j.jbusvent.2016.05.003.

22. Fadil, N., St-Pierre, J. (2021). Growing SMEs and Internal Financing: The Role of Business Practices. *Journal of Small Business and Enterprise Development*, 28(7), 973-994. https://doi.org/10.1108/JSBED-11-2019-0375.

23. Fehder, D., Hochberg, Y. (2014). Accelerators and the Regional Supply of Venture Capital Investment. http://dx.doi.org/10.2139/ssrn.2518668.

24. Fisher, G., Kuratko, D., Bloodgood, J., Hornsby, J. (2017). Legitimate to whom? The challenge of audience diversity and new venture legitimacy. *Journal of Business Venturing*, 32(1), 52-71. https://doi.org/10.1016/j.jbusvent.2016.10.005.

25. Gottschalk, S., Greene, Francis J., Höwer, D., Müller, B. (2014). If you don't succeed, should you try again? The role of entrepreneurial experience in venture survival. *ZEW Discussion Papers* 14-009, ZEW Leibniz Centre for European Economic Research.

26. Guo, B., Peng, S. (2020). Do Non-Profit and For-Profit Social Enterprises Differ in Financing? *International Journal of Voluntary and Nonprofit Organizations*, 31(3), 521-532. DOI:10.1007/s11266-020-00218-5.

27. Harrison, R., Mason, C., Smith, D. (2015). Heuristics, Learning and the Business Angel Investment Decision-Making Process. *Entrepreneurship & Regional Development*, 27(9-10), 527-554. DOI: 10.1080/08985626.2015.1066875.

28. Hechavarria, D., Matthews, C., Reynolds, P. (2016). Does Start-up Financing Influence Start-up Speed? Evidence from the Panel Study of Entrepreneurial Dynamics. *Small Business Economics*, 46(), 137-167. https://doi.org/10.1007/s11187-015-9680-y.

29. Hochberg, Y., Ljungqvist, A., Yang, L. (2007). Whom You Know Matters: Venture Capital Networks and Investment Performance. *The Journal of Finance*, 62(1), 251-301. https://doi.org/10.1111/j.1540-6261.2007.01207.x.

30. Hoffman, D., Radojevich-Kelley, N. (2012). Analysis of Accelerator Companies: An Exploratory Case Study of Their Programs, Processes, and Early Results. *Small Business Institute Journal*, 8(2), 54-70.

31. Honoré, F. (2020). Joining Forces: How can founding members' prior experience variety and shared experience increase startup survival? *Academy of Management Journal*, 65(1), 248-272. https://doi.org/10.5465/amj.2018.1386.

32. Hsu, D. (2007). Experienced Entrepreneurial Founders, Organizational Capital, and Venture Capital Funding. *Research Policy*, 36(5), 722–741. https://doi.org/10.1016/j.respol.2007.02.022.

33. Ibrahim, D. (2010). Debt as Venture Capital. *University of Illinois Law Review*, 2010(), 1169. http://dx.doi.org/10.2139/ssrn.1418148.

34. Jensen, M. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *American Economic Review*, 76(2), 323-329.

35. Jones, S. (2020). Prior CEO Experience as a Predictor of Entrepreneurial IPO Success: An Analysis of VC Investment Performance. Available from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3463135 (Accessed 14th September 2022).

36. Kaplan, S., Sensoy, B., Stromberg, P. (2009). Should Investors Bet on the Jockey or the Horse? Evidence from the Evolution of Firms from Early Business Plans to Public Companies. *The Journal of Finance*, 63(4), 1653-1678. https://doi.org/10.1111/j.1540-6261.2008.01429.x.

37. Ko, E.-J., McKelvie, A. (2018). Signaling for more money: The roles of founders' human capital and investor prominence in resource acquisition across different stages of firm development. *Journal of Business Venturing*, 33(), 438–454. https://doi.org/10.1016/j.jbusvent.2018.03.001.

38. Lall, S., Jacob, P. (2020). How Social Ventures Grow: Understanding the Role of Philanthropic Grants in Scaling Social Entrepreneurship, Business & Society, 61(1), 3-44. https://doi.org/10.1177%2F0007650320973434.

39. Lall, S. A.; Chen, L.-W., Roberts, P. (2020). Are we accelerating equity investment into impact-oriented ventures? *World Development*, 131(), 104952. https://doi.org/10.1016/j.worlddev.2020.104952.

40. Lafontaine, F., Shaw, K. (2016). Serial entrepreneurship: Learning by doing? *Journal of Labor Economics*. University of Chicago Press, 34(S2), 217-254. https://doi.org/10.1086/683820.

41. Mackiewicz, M., Kurczewska, A. (2020*).* Is it the survival of the fittest or the jack-of-all-trades? Business Survival in the Light of Lazear's theory. *Business Research Quarterly*, 1-14. https://doi.org/10.1177/2340944420976652.

42. Mansoori, Y., Karlsson, T., Lundqvist, M. (2019). The influence of the lean startup methodology on entrepreneur-coach relationships in the context of a startup accelerator, *Technovation*, 84–85(), 37-47. https://doi.org/10.1016/j.technovation.2019.03.001.

43. Markova, S., Petkovska-Mircevska, T. (2009). Financing Options for Entrepreneurial Ventures. *The AMFITEATRU ECONOMIC Journal*, 11(26), 597-604.

44. Myers, S., Majluf, N. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187-221.

45. Nahata, R. (2020). Success is good but failure is not so bad either: Serial entrepreneurs and venture capital contracting. *Journal of Corporate Finance*, 58(), 624-649. https://doi.org/10.1016/j.jcorpfin.2019.07.006.

46. Penrose, E.T. (1959). *The Theory of the Growth of the Firm*. Oxford: Oxford University Press.

47. Peña, I. (2004). Business Incubation Centers and New Firm Growth in the Basque Country. *Small Business Economics*, 22(3/4), 223-236. https://doi.org/10.1023/B:SBEJ.0000022221.03667.82.

48. Petty, J., Gruber, M. (2011). "In Pursuit of the Real Deal": A Longitudinal Study of VC Decision Making. *Journal of Business Venturing*, 26(2), 172-188. https://doi.org/10.1016/j.jbusvent.2009.07.002.

49. Pierrakis Y., Owen, R. (2020). Accelerating green ventures: an exploration of how young environmental ventures signal a green light to their accelerator investors. Paper presented to the Institute for Small Business and Entrepreneurship (ISBE) online conference: SME Finance for Building Back Better, ISBE, 1-2 June 2020.

50. Prasad, D., Bruton, G., Vozikis, G. (2000). Signaling value to business angels: the proportion of the entrepreneur's net worth invested in a new venture as a decision signal. *Venture Capital*, 2(3), 167-182. https://doi.org/10.1080/13691060050135064.

51. Regmi, K., Ahmed, S. A., Quinn, M. (2015). Data Driven Analysis of Startup Accelerators. *Universal Journal of Industrial and Business Management*, 3(2), 54-57. DOI: 10.13189/ujibm.2015.030203.

52. Robb, A., Robinson, D. (2014). The Capital Structure Decisions of New Firms. *The Review of Financial Studies*, 27(1), 153–179. https://doi.org/10.1093/rfs/hhs072.

53. Ross, S. (1977). The Determination of Financial Structure: The Incentive-Signaling Approach. *The Bell Journal of Economics*, 8(1), 23-40.

54. Samuelsson, M., Davidson, P. (2009). Does Venture Opportunity Variation Matter? Investigating Systematic Process Differences between Innovative and Imitative New Ventures. *Small Business Economics*, 33(), 229–255. https://doi.org/10.1007/s11187-007-9093-7.

55. Scarlata, M., Zacharakis, A., Walske, J. (2016). The Effect of Founder Experience on the Performance of Philanthropic Venture Capital Firms. *International Small Business Journal*, 34(5), 618-636. DOI: 10.1177/0266242615574588.

56. Shane, S., Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research. *The Academy of Management Review*, 25(1), 217-226. https://doi.org/10.5465/amr.2000.2791611.

57. Shaw, K. L., Sørensen, A. (2019). The productivity advantage of serial entrepreneurs. *Industrial and Labor Relations Review*, 72(5), 1225-1261. https://doi.org/10.1177/0019793919865501.

58. Shepherd, D., Williams, T., Patzelt, H. (2015). Thinking about entrepreneurial decision making: Review and research agenda. *Journal of Management*, 41(1), 11–46. DOI: 10.1177/0149206314541153.

59. Shu, C., Simmons, S.A. (2018). Firm survival in traded industries: does localization moderate the effects of founding team experience? *Small Business Economics*, 50(), 643–655. https://doi.org/10.1007/s11187-017-9912-4.

60. Spence, M. 1973. Job Market Signalling, *Quarterly Journal of Economics*, 87(), 355-374.

61. Staniewski, M. (2016). The contribution of business experience and knowledge to successful entrepreneurship. *Journal of Business Research*, 69(11), 5147-5152. https://doi.org/10.1016/j.jbusres.2016.04.095

62. Tian, X., (2011). The causes and consequences of venture capital stage financing. *Journal of Financial Economics*, 101(1), 132-159. https://doi.org/10.1016/j.jfineco.2011.02.01.

63. Ucbasaran, D., Alsos, G., Westhead, P., Wright, M. (2008). Habitual Entrepreneurs. *Foundations and Trends in Entrepreneurship*, 4(4), 309–450. http://dx.doi.org/10.1561/0300000014.

64. Unger, J., Rauch, A., Frese. M., Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. *Journal of Business Venturing*, 26(), 341–358. https://doi.org/10.1016/j.jbusvent.2009.09.004

65. Vaillant, Y., Lafuente, E. (2019). Entrepreneurial experience and the innovativeness of serial entrepreneurs. *Management Decision*, 57(11), 2869-2889. https://doi.org/10.1108/MD-06-2017-0592.

66. Venâncio, A., Jorge, J. (2021). The Role of Accelerator Programmes on the Capital Structure of Startups. *Small Business Economics*, (), https://doi.org/10.1007/s11187-021-00572-8.

67. Waleczek, P., Zehren, T., Flatten, T.C. (2018). Start-up financing: How founders finance their ventures' early stage. *Managerial and Decision Economics*, 39(5), 535-549. https://doi.org/10.1002/mde.2925.

68. Wiltbank, R., Boeker, W. (2007). Returns to Angel Investors in Groups. http://dx.doi.org/10.2139/ssrn.1028592. Available from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1028592 (Accessed 4th January 2022).

69. Wooldridge, J. (2013). *Introductory Econometrics. A modern Approach*. South-Western. Cengage Learning, 5th Ed.

70. Yang, S., Kher, R. (2018*).* Where Do Accelerators Fit in the Venture Creation Pipeline? Different Values Brought by Different Types of Accelerators. *Baruch College Zicklin School of Business*. Research Paper No. 2018-07-02. http://dx.doi.org/10.2139/ssrn.3212379.

71. Ye, Q. (2017). Bootstrapping and new-born startups performance: The role of founding team human capital. *Global Journal of Entrepreneurship*, 1(2), 53-71.

72. Yitshaki, R., Kropp, F. (2016). Motivations and Opportunity Recognition of Social Entrepreneurs. *Journal of Small Business Management*, 54(2), 546-565. DOI: 10.1111/jsbm.12157.

73. Zhang, S., Cueto, J. (2017). The Study of Bias in Entrepreneurship. *Entrepreneurship Theory and Practice*, 41(3), 419-454. DOI: 10.1111/etap.12212.

74. Zhang, H., Bij, H.v.d., Song, M. (2020). Can cognitive biases be good for entrepreneurs? *International Journal of Entrepreneurial Behavior & Research*, 26(4), 793-813. https://doi.org/10.1108/IJEBR-03-2019-0173.

75. Zingales, L. (2000). In Search of New Foundations. *The Journal of Finance*, 55(4), 1623-1653. https://doi.org/10.1111/0022-1082.00262.

HEDGING MARKET TAIL RISK FACTORS WITH VOLATILITY INDICES

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ABSTRACT: *Volatility indices and financial engineering appear as a response to mitigate the damage of extreme events caused by apparent misbehaviors in stock markets. This paper studies the Cboe Volatility Index known as the VIX as well as its related derivatives and the risk management applied with the VIX. From quantitative finance research, we seek to extract how it can be a valuable component as an effective hedging tool in "no downside" investment strategies and as a barometer of market tail risk factors. Results show recent evidence of its "insensitivity" effect relative to the US stock market that could prevent its derivatives from being fair hedges. Time varying correlations and co-movements between the VIX and a proxy of the US stock market show another limitation of VIX hedging. The second analysis here focuses on its ability to be a forward-looking indicator of realized volatility and potential stress in stock markets for financial institutions. Results indicate some predictiveness of the amplitude of future movements if not directional. The paper also outlines criticism of the VIX and explains why the Cboe recently introduced the 1-day VIX. The primary outcome of this research is to understand the optimal use of volatility indices for hedging strategies and as tail risk predictor. The main objective of this paper is to verify how effective VIX options are as a hedge against drawdowns in the US stock market.*

KEYWORDS: VIX, SPX, volatility indices, hedging, tail risk, implied volatility, historical volatility, options, time varying correlation

Volatility in stock markets forces financial institutions and market makers to dynamically hedge their risk exposures. The following paper focuses solely on hedging tail risk factors (extreme events) with options. Such risk factors include among others unexpected and rapid selloffs (fire sales) driven by fear of near-term market conditions, complete loss of confidence or lack of liquidity due to uncertainty and self-doubt. Financial engineering of volatility indices and their related derivatives offer a solution to financial institutions to mitigate these risks. Hedging is centered around downside risk protection by offsetting losses incurred by unexpected opposite movements in the underlying portfolio. An effective hedging mechanism allows to preserve the assets' value. The practice also permits risks to be transferred across the financial system and reduces so-called concentration risks.

Volatility captures the loose (amplitude), rapid (acceleration) and stochastic (turbulence) attributes of floating price variations. In financial literature, it is the statistical measure that we attribute to risk and is usually measured by the square root of the second-order moment of financial returns. Since the early 2000s, it is directly tradeable through both futures and options linked to a set of volatility index products such as the family of the VIX indices on the Chicago Board Options Exchange (Cboe). After a period in 2022 marked by a de-risking approach of investors' portfolios with a fall in the allocation towards global stock markets, the market reversed with a rising global equity allocation and strong demand for hedging tail risks using VIX options. As argued here, whereas options on broad stock market indices are used as a hedge against relatively small drops, options on volatility indices are hedges against severe drops and tail events.

Historically, the VIX had a negative correlation with the broader US stock market. In this paper, we will study a rare phenomenon in which the time-varying correlation was positive, what we call the "*decorrelation*" effect. Structural breaks and non-stationarity widely observed in financial returns cause correlations to deviate from their historical correlation (Mandelbrot, 2008). In speculative markets, price time varying measures of correlation are more appropriate to capture the changing dynamics between two financial variables. Analysis on time varying correlations will be used here to explain the limitations of VIX hedging strategies. However, our results will show here that it remains a powerful hedging tool and a solution for effective risk management in case of tail events.

The main argument of recent criticism lies within the observations that the VIX does not move as it should in view of recent distress in the US banking sector. Many financial articles argued that the absence of spikes in the VIX suggests that something is wrong with its sensitivity to react to material news. This phenomenon dubbed here "*insensitivity*" effect poses a limitation for the VIX to be used as a hedge in the US stock market. The VIX remained well below the 20-mark threshold for most of the time amid the US banking and war-related turmoil in the first and second quarter of 2023 with only rare spikes observable. Financiers and analysts agree that the appropriate level of the VIX ought to have to be around 30 at that time. Many factors highlighted hereafter explain why the SPX options trading activity reduces the ability of the VIX to move as expected.

The combination of index investing and hedging through volatility indices would allow to build a floor and limit losses of savers in the event of stock market crashes or major corrections. Life insurers such as Société Générale Life Insurance offer investment products with a 95% guarantee of the investment capital and direct exposure to financial markets. Aside from the private life insurance market, this investment approach was also recently made possible on public markets through the financial engineering of "*no downside*" ETFs. Setting a floor on a portfolio reduces the upside potential to generate higher returns. Foregoing some upside potential to limit dramatic losses is a viable choice. As explained hereafter, "*active*" hedging using derivatives offers an efficient protection against major drawdowns. They also give a fair glimpse of future volatility and offer "*passive*" hedging by becoming more prudent in anticipation of abnormal expected volatility.

The aggregate stock market tends to follow a stable trend line over time. The deviation from this trend line is the noise caused by the market and its countless actors (Shiller, 2013). It was already argued by the famous mathematician Benoit Mandelbrot as early as the 1970s that financial markets

tend to "*misbehave*" and volatility is higher than expected by normally distributed models. The integration of behavioral models to explain speculative asset prices culminated with the Nobel Prizes in Economic Sciences given to Robert J. Shiller in 2013 and to Richard H. Thaler in 2017. As argued by behavioral finance, volatility should be much lower under the efficient market hypothesis than is observed in our financial markets. As shown in this paper, volatility has been abnormally high in the last decade thus exposing savers even in the long run. The outcome of this research is to understand how a dynamic VIX options hedging strategy can be optimally calibrated in order to reduce severe drawdowns in portfolios with US stock market exposures without jeopardizing the potential upside. Our main objective will be to introduce a study of volatility indices as a risk management tool and to evaluate their effectiveness for hedging strategies and prudential market exposures with direct application for financial institutions.

CONTEXT ANALYSIS

Review and Criticism of the VIX

The VIX is a forward-orientated financial index in contrast with a backward-orientated index such as the S&P500 Composite Index (ticker: SPX). It was introduced in 1993 by the Chicago Board Options Exchange Global Markets (Cboe). The methodology of the VIX computation found in Appendix 1 was revised in 2003. Based on this updated methodology, the VIX looks at the implied volatility of the SPX for the next 30 days by capturing weighted average changes in SPX option quotes with 23-37 days to expiration. The SPX is a free-float market capitalization-weighted index composed of the 500 largest publicly listed companies in the US. The SPX represents roughly 80% of the US stock market's total capitalization and serves here as a proxy for the entire US stock market. SPX options prices are affected by changes in the underlying companies that constitute the index.

The VIX should be a barometer of expected volatility based on how options traders position themselves regarding the SPX near-term movements (ca 30 days). For instance, if the VIX is 22, it reveals that SPX options with roughly 30 days to expiration have an annualized implied volatility equal to approximately 22%. All other things being equal, a rise in the level of the VIX is caused by an increase in SPX put options prices relative to call options prices and conversely if they fall. More on IV option pricing is discussed below. Changes in put/call quotes with an expiration of more or less 30 days on the composite will reflect the direction toward which the composite will more likely move as implied by SPX options traders. By widening the gap between SPX call and put option prices for the same strike, the VIX will bounce upwards suggesting that the market expects stronger movements in the near-term future. As a result, the VIX and other similar volatility indices such as the Nasdaq-100 Volatility Index (ticker: VOLQ) or the Cboe NASDAQ Volatility Index (ticker: VXN)[1] capture a broad market sentiment rather than a factual state of market valuation. They are very sensitive to market conditions and show how uncertain and even fearsome traders are in the market by looking at the options trading activity underlying major stock market indices.

1 Methodology of VXN computation is the same as the VIX and can be found at [online]: https://www.cboe.com/us/indices/dashboard/vxn/

For the reasons cited above, the VIX is therefore repeatedly referred to as the "*fear gauge*" or "*uncertainty index*" as a reminder of what it represents. Volatility indices capture behavioral and psychological factors such as fear, confidence, self-doubts, or negative sentiments underlying market price fluctuations. The intensity of these factors can be well observed by looking at the index level over time. Closing values of the VIX and SPX are depicted in Figure 1 below. VIX spikes are marked by higher fear and uncertainty among market participants and accompanied by extreme drawdowns in the US stock market. There are no apparent trends for the VIX except some seasonality at years' end directly derived from the seasonality of the US stock market as illustrated in Figure 2 below. From 1990 to 2022, the average daily closing values were much higher from September to December compared to January to August. In 2023, the inverse seems to be the case with higher values in the first half. The VIX level in September 2023 is much lower than its 32-year average and reached a 3-year low on September 14, 2023. The VIX remained below 20 for more than 95 consecutive sessions in 2023. Factors explaining why seasonality is not observed at time of writing will be explained below.

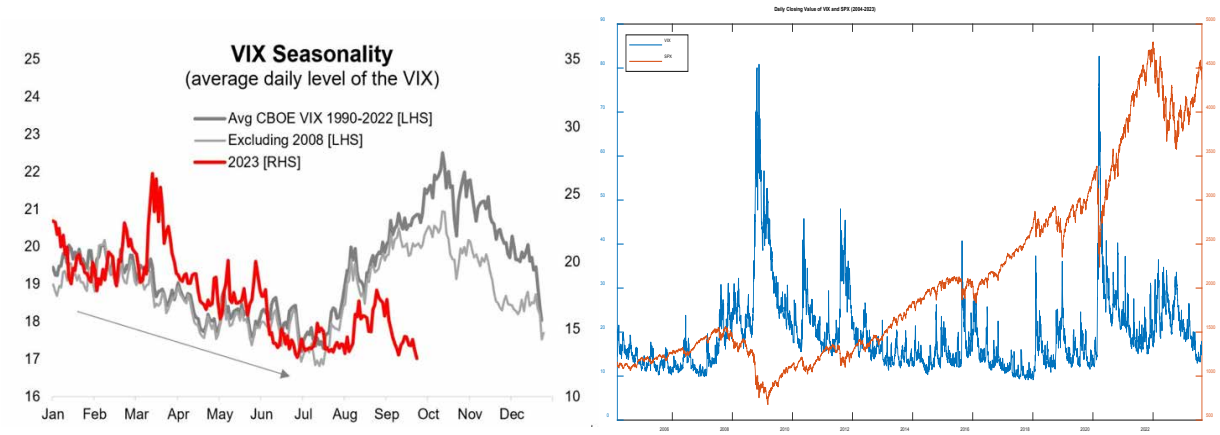


Figure 1: VIX daily closing values for 2023 (in red) and average closing values for 1990 to 2022 (in grey bold) and excluding 2008 (in grey light). Source: Top Charts & Refinitiv

Figure 2: VIX and SPX closing values from March 4, 2004, to August 18, 2023.

Options are genuinely known as one of the most used and effective hedging tools against downside risk and unexpected future price movements. Options linked to the VIX were introduced by the Cboe in 2006. VIX options have the particularity to rely on VIX futures with the equivalent expiration date as the underlying contract. VIX futures act as the shares for VIX options on which option prices will be determined. VIX options are cash-settled and classified as European style[2]. They may only be exercised at the expiration date. Changes in the VIX will not necessarily and immediately affect the price of VIX options. It can be observed that VIX option prices have risen over the end of the trading day. It can also be observed that VIX futures and options lag changes of the VIX with lower amplitude. These observations can be partially explained from the tendency that volatility in the US stock market is higher at opening and closing of any given trading day (Cboe, 2023).

2 VIX options product specifications can be found at [online]: https://www.cboe.com/tradable_products/vix/vix_options/specifications/

There are various option pricing models with different degree of accuracy and mathematical complexity[3]. One of the earliest models adopted is the Blach-Scholes model developed by Fischer Black and Myron Scholes in 1968. The model uses a geometric Brownian motion with constant drift and volatility to describe the underlying asset prices' stochastic process. Based on empirical tests, it is most accurate for European style options but has many shortcomings in terms of accuracy. It relies on a set of conditions that are not aligned with statistical properties and functioning of financial markets such as the normality of returns' distribution, volatility remains constant over time and no arbitrage opportunity. An extended version of the Black-Scholes model is the Heston model in which the volatility is non-constant and follows a stochastic process. We describe the Heston stochastic volatility model in Appendix 2. In 2009, the characteristic function-based Fourier-cosine method was introduced by Fang and Oosterlee to value European options and deal with shortcomings of applying the geometric Brownian motion to describe asset prices in a continuous time series. The Fang-Oosterlee model accounts for the sudden jumps and breaks in the time series of asset prices. Another category of relevant models are the binomial models which rely on probability trees to model the underlying asset prices in discrete time series.

The higher the open interest in put options and VIX call options, the more traders expect downward price movements. Traders will open long puts or write calls to hedge themselves against uncertainty and downward pressure on the underlying security. For the VIX, traders will open long calls or write puts if they expect higher volatility in the SPX. As recorded on August 31, 2023, the VIX open interest ratio is equal to 0.30 and for the SPX to 1.46[4]. Looking at the 2-month skew of the VIX compared to the SPX in August 2023 the market is clearly increasing its tail risk protection (Cboe, 2023)[5]. On August 23, the 2-month skew moved above 1.7 after it fell below 1 earlier on August 19. All these ratios signaled a bearish sentiment on the US stock market in the near term.

One of the stylized facts of financial returns is the leverage effect which refers to a negative correlation between an asset's volatility with its returns. Empirically we observe the tendency of the asset's volatility to increase when the asset's returns are negative and conversely if positive. The leverage effect is observable in Figure 1 above where we can see the VIX jumping upwards as there are drawdowns in the SPX. We will observe in Section IV the occurrence of a positive time-varying correlation or so-called "*decorrelation*" effect between the VIX and the SPX which goes against this well-researched statistical property. This phenomenon could affect the effectiveness of hedging downside risk of the SPX with long VIX futures; VIX call options or VIX-based ETFs. The origin of this unusual phenomenon and its implication for hedging will be investigated in length in Section IV.

Hedging costs of the SPX can be measured with the VIX. As the VIX is low, the cost of options for hedging against a drop in the SPX falls as well. Conversely, if it is high, costs tend to increase rapidly. We can observe this phenomenon particularly well with the SPX options or options on funds directly linked to the SPX. As the VIX moved to its lowest level in more than two years as of July 2023, the cost of 95% put options[6] with 1-year to expiration on the SPX fell subsequently to their lowest level

3 More details about research on options pricing models and empirical tests can be found in the following paper accessible at [online]: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3976383

4 Data extracted from Cboe Daily Market Statistics database accessible [Online] at: https://www.cboe.com/us/options/market_statistics/daily/

5 The 2-month skew is computed as the call/put interest ratio of 25-delta VIX and SPX options. More details on delta are explained in appendix 4.

6 95% put options are out-of-money at 5% below the strike price of the underlying contract

in over a decade (Bloomberg, 2023). This massive drop in hedging costs was directly attributable to the low level of expected volatility set by the market during the months of June and July 2023. The IV pricing also explains well the relative insensitivity of the VIX to react to material news such as Silicon Valley Bank's liquidity crisis in March 2023. Movements in SPX options prices were less sensitive to changes in the underlying thus reducing the sensitivity of the VIX to react. The IV pricing described below gives more evidence why the VIX remained low in 2023.

Along those lines, many articles recently mentioned that the "*VIX is broken*". There have been several limitations of the VIX to perform both as a volatility index and hedge against a fall in the SPX. One of the reasons attributed to the inability of the VIX to move is the high frequency of zero days to expiration (0DTE) options trading which are option contracts that expire at the end of the current trading day (Noël, 2023). As of September 2023, it was recorded that an astonishing 54% of all SPX daily options volume were solely attributable to ODTE options (Financial Times, 2023). The trend has not impacted the stability of the stock market as the total volume was balanced between buyers and sellers (Xu, 2023). On the other hand, the rise in SPX ODTE volume could affect the changes of the VIX because SPX options' volatility with expiration between 23-37 days used in the computation falls as trading moves more towards ODTE options. The higher the proportion of ODTE SPX options, the less it will affect changes in 23-37 days SPX options prices due to lack of liquidity.

Trading volumes in VIX and SPX options tend to increase as risks materialize in markets and/or if there is a high degree of uncertainty around future outcomes. As of 2023, VIX options trading volumes are averaging over 740'000 contracts per trading day, up 40% compared to 2022 (Cboe, 2023). The high volume is mostly attributable to a surge in demand for VIX hedges which jumped to a 5-year high in August 2023. This signals that the market faces uncertainty about future events such as the coming path of central banks' rate hikes or cuts. As observed in Figure 3 and 4 below, daily options volume spiked during the unravelling of the Silicon Valley Bank failure and US banking crisis in March 2023, and weekly options volume jumped after the announcement of the pandemic by the WTO in March 2020. We also observe other spikes not caused by material news but rather by market trends or reactions to technical indicators. In June 2023, there was an unusually high volume of VIX options as the SPX moved close to a level 20% above its low point from October 2022. Supposedly, the market reacted to a new resistance level and hedged their risks by trading VIX options.

Another unusual and abnormal volume can be observed on February 5, 2018. The Dow Jones Industrial Average Index (DJIA) dropped by an intraday record of 1,500 points while the SPX fell by more than 4% in the same trading day. According to financial literature, there was no material news on that day. The Fed had announced a week earlier rates hikes, but volatility and volumes spiked only on Monday the week after. These observations show that markets tend to hectically and not progressively hedge downside risks or speculate about near-term price movements. As reflected below, these extreme events will be hedged by markets with VIX options (blue) rather than SPX options (orange) as they are more effective against heavy tail risks. This partially explains why VIX daily/weekly volumes are much higher than SPX daily volumes in those special cases.

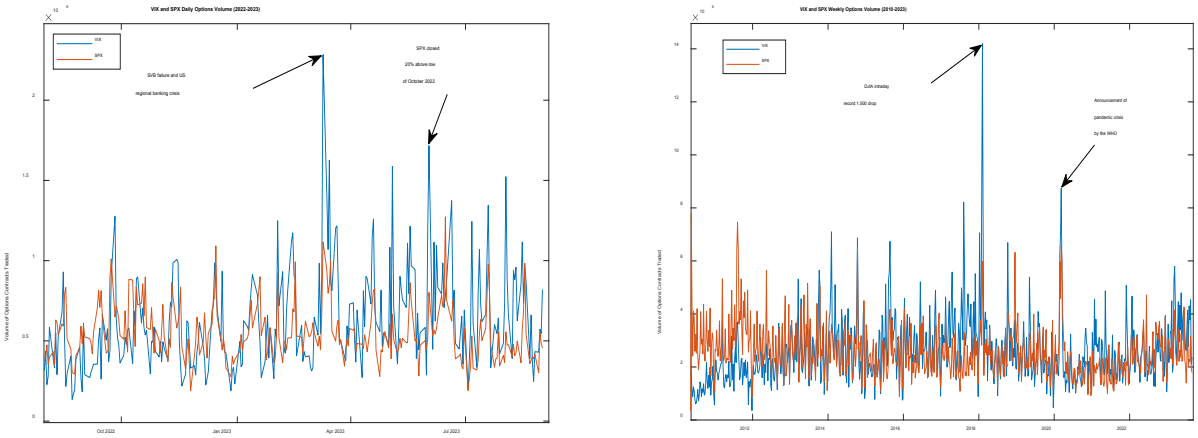


Figure 3: VIX and SPX daily options volume from August 1, 2022 to August 28, 2023.
Figure 4: VIX and SPX weekly options volume from May 17, 2010 to August 28, 2023.

Historical volatility (HV), statistical or realized volatility is a fair indicator of how risky a given financial asset was in the past. There are many methodologies that were developed to calculate HV of financial asset returns. The most common and simple approach is the close-to-close method. Based on the mean squared error (MSE) for an unbiased estimator optimization, the most accurate method for computing relatively small sample sized HV is the Yang-Zhang calculation explained in Appendix 3 below. Introduced in 2000, it accounts for overnight volatility thus including both opening jumps and drifts that are left out by other methodologies[7].

Implied volatility (IV) is a fair indicator of how risky a security will be in the near future based on market participants' expectations. It is usually compared to HV to evaluate whether options are relatively under- or overpriced (see footnote 7). Whereas HV can be computed precisely with past data, IV is derived from the expectation of the underlying price changes and determined by an option pricing model (see footnote 3). Inserting the IV in the model, it must give the current market price of the option. It is therefore a backward calculation from the options' value to the IV. The VIX approximates the IV of the SPX. In turn, the VVIX approximates the IV of the VIX. The IV is a necessary input in any model for options pricing[8]. The option pricing reveals how the market expects the underlying to move in the future thus approximating its future volatility.

Two patterns appear in a volatility surface when graphing the IV in function of the strike prices as depicted in Figure 5.A below. The volatility skew in which IV is higher for lower strike prices shows market expectations of higher downside risk. The volatility smile in which IV is high on the edges and low in the middle shows market expectations of large movements in both directions. Based on the volatility skew graphed in Figure 5.A, the market is skewed towards downward expectations. Usually, we observe a positive relationship between the IV/HV and the option price. In Figure 5.B, we observe the IV curves of the SPX with expiration respectively in September, October and November. The SPX IV is synched most of the time within a small range. We see that

7 Methodologies of the HV estimators cited here can be found in a report from Santander's equity derivatives department at [online]: https://dynamiproject.files.wordpress.com/2016/01/measuring_historic_volatility.pdf
8 For more details on options pricing, see footnote 2 above.

September options have lower IV than October and November options suggesting an expectation of smaller movements in the short-term compared to the near-term. It is not unusual to see the inverse situation with short-term expirations having higher IV than longer ones. As of September 2023, it seems that options are priced with the assumption that the underlying will move strongly in the coming month with November IV higher than October IV. As a result, IV pricing on October options will be lower than in November options[9].

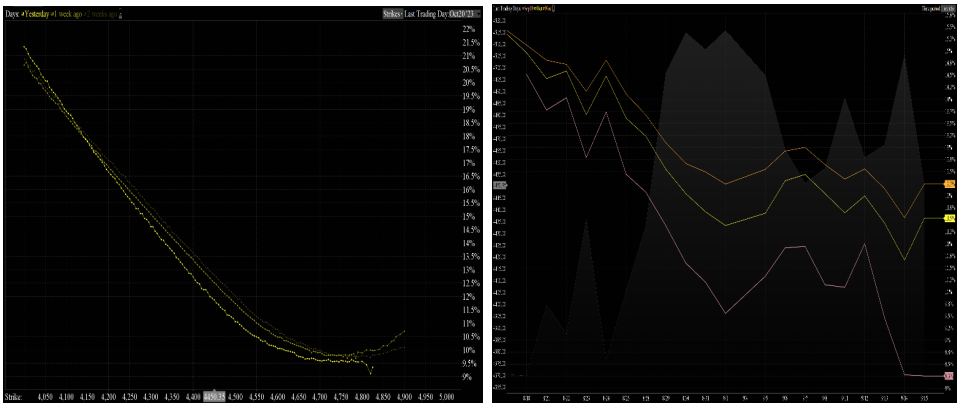


Figure 5A: Implied volatility (overnight, 1 week and 2 weeks ago) in function of the strike price on the underlying SPX contract (last closing value highlighted in grey) as of September 18, 2023

Figure 5B: Past recorded implied volatility in function of the strike price on the underlying SPX contract (grey) in 2023 with option expiration September 19 (pink), October 20 (yellow) and November 16, 2023 (orange).

REVIEW OF OTHER VOLATILITY INDICES AND HEDGING STRATEGIES

As a response to new trends in the options market, the Cboe issued a new index called the 1-day VIX (ticker: VIX1D). Contracts on VIX1D offer traders an intraday hedge against impactful events. This financial product is the newest member of a collection of volatility indices issued by the Cboe which include already a 9-day, 3-month, 6-month, 1-year VIX and a volatility index of the VIX (ticker: VVIX). The VVIX is directly derived using the same methodology as the VIX computation with VIX options as the input instead of SPX options. The VIX1D should provide traders with a real-time measurement of the expected IV within the current trading day. It was launched in April 2023 and can now be traded through futures and options. The major argument for developing this new volatility index was to capture the large effect of ODTE SPX options and their intraday IV.

In the aftermath of the failure of two US banks on March 8, 2023, and March 13, 2023, the VIX spiked only from 19.11 to 26.52 representing a 38.8% increase compared to the back testing of the VIX1D which rose over the same period by 162.7%. The hypothetical closing values of the VIX1D from May 2022 to September 2023 are illustrated along the VIX in Figure 6 below. Observations suggest that the design of the VIX1D captures much better impactful events. The relatively low movements in the VIX suggest that traders were not expecting high volatility in the near-term future but rather in a narrower window of 1-2 days thus leaving the VIX unaffected.

9 IV pricing refers to the pricing model function in which the equation $C=f(IV)$ where C is the option premium does not have closed-form solution. It can be proven that the function f is monotonically increasing with input IV. A higher value of implied volatility translates directly into a higher options value. If IV is higher than HV, then the option is considered overpriced and vice versa.

Traders would therefore increase their activity in very short-dated SPX options thus affecting the VIX1D much more than the VIX. The VIX1D is computed with the same methodology as the VIX with the next term expiration being the current trading day and the nearest term expiration being the next trading day. The methodology for computing the VIX1D can also be found in Appendix 1.

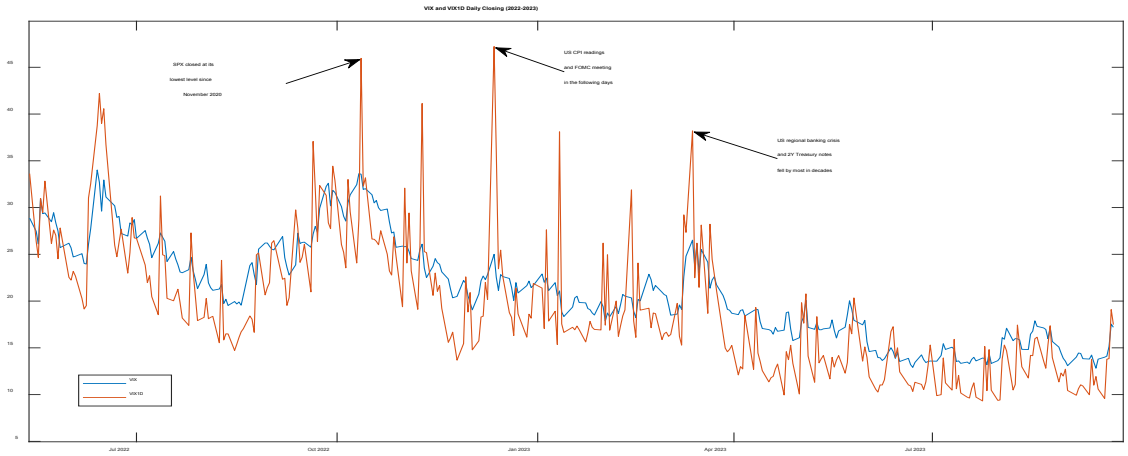


Figure 6: Daily closing values of simulated VIX1D and VIX from May 13, 2022 to September 22, 2023.

The most common hedging strategy consists of using a combination of long/short positions with VIX futures/options and long/short SPX exposures[10]. VIX call options are a useful hedging tool for any portfolio that is long SPX constituents considering their negative relationship computed in Section IV. However, the hedging strategy of tail risk protection using VIX derivatives underperformed in 2022 relative to other years even as the US stock market underwent a strong downside correction. The underperformance of this strategy based on VIX call options can be measured based on the Cboe VIX Tail Hedge Index (ticker: VXTH)[11].

The VXTH computes the performance of a hypothetical portfolio composed of long SPX positions (e.g. ETFs, futures, total return swaps) and long positions on 1-month 30-delta VIX call options. The call options with expiration of 30 days and a delta equal to 30 are used in this case as a direct hedge. Delta is the measurement of the price sensitivity of the option prices given a 1% change in the underlying security's price. In this case, a 1% movement in VIX futures prices will result in a 0.30% rise in VIX options prices. More definitions on the four main Greeks can be found in Appendix 4 below. New VIX calls are bought each month using the roll-over of expired contracts (after 30 days) to new contracts (with 30 days to expiration). The weight of each VIX call is determined based on the 1-month forward level of the VIX which is a genuine indicator of the perceived probability of an extreme event. Cboe defines the weights according to the schedule shown in Table 1 below. The VXTH performs best when VIX call options generate exceptional high returns and no new calls are purchased to align with the scheduled weight allocation.

10 The largest asset manager in the world, Blackrock, published a paper on how to implement an effective hedging strategy with the VIX called "*VIX your Portfolio*" accessible at [online]: https://cdn.cboe.com/resources/vix_options/blackrock-vixyourportfolio.pdf
11 Data can be extracted on the index dashboard of Cboe VIX Tail Hedge Index at [online]: https://www.cboe.com/us/indices/dashboard/vxth/

1-Month Forward VIX (F)	Portfolio Weight of VIX Calls (V)
	0%
	1%
	0.5%
	0%

Table 1: Cboe schedule of applied portfolio weights of VIX calls relative to 1-month forward VIX.

Compared to 2020, 2021 and 2023 (year-to-date), the VXTH performed poorly in 2022 showing that the hedging strategy did not work as efficiently as expected. Given the occurrence of an extreme and under some definitions "*black swan*" event in 2022 with the Russian invasion of Ukraine, its underperformance remains to be understood. Reasons that will be studied in Section IV below include the "*decorrelation*" effect and the fall in demand for VIX and SPX hedging in 2022. In 2023, there was a reversion of this trend and the massive surge in demand for VIX call options spiked to record levels. The surge was mainly attributed to the need to hedge tail risks and a higher US equity allocation across global portfolios. According to Edward Tilly, Chairman and CEO of Cboe, the strong rally in the US stock market in 2023 pushed global investors to hedge more their US-based positions. He also explained how the VVIX indicates that cost of VIX hedging is rapidly increasing in late August after remaining low in 2022 and the first half of 2023. VIX derivatives appear as an efficient risk management tool yet hedging strategies must be implemented in a manner that is aligned with the attributes of the VIX and SPX. Volatility indices are also clear signals of deteriorating conditions and tools against asset depreciation and losses. We will now describe why.

RESEARCH METHODOLOGY

The secondary research outlined in the context analysis above has set the stage for understanding the limitation and criticism raised in recent financial coverage against the VIX. From the context analysis, we also came to understand the trading activity of VIX and SPX options and how it can give us a lot of valuable information about market expectations. In the second part of the paper, we conduct our primary research by extracting statistical properties and conducting various tests of the VIX and confront them with our findings and outcomes in the secondary research.

The data set used for the VIX spans from January 2, 1990, to September 22, 2023 and is composed of 8505 data points of closing values. All computation on the VIX returns is based on simple returns rather than logarithmic returns. The behavior of the VIX is very different than other financial assets. It moves horizontally with a strong mean-reversion tendency and discrete occurrences of spikes. It does not follow any consistent trend except some seasonality described above. Due to its "*spiking*" attribute, there are very large daily changes observable and structural breaks in the time series. The use of logarithmic returns would be unprecise for the computation done below. As the use of simple returns is more appropriate for the VIX, we also use simple returns for the SPX to compute correlation factors. Logarithmic returns will be used for the descriptive statistics of the SPX being more appropriate for traditional financial assets.

Correlations between the VIX and SPX are time varying due to the presence of structural breaks in the time series and the non-stationarity of their daily changes. We show empirical evidence on the VIX ability to be a hedging tool against downside tail risk in the US stock market by analyzing the leverage effect and the trailing correlation coefficients of the VIX and SPX. We use the adjusted daily closing values as our data set from March 4, 2004, to August 18, 2023, consisting of 4896 data points. The calculation of the trailing correlation coefficients is based on the Pearson methodology that can be found in Appendix 5 and is implemented using the coding language Python and the related graphs are generated on MATLAB. We apply here the trailing correlation to measure dynamically the evolution of the relationship between our two variables of interest. In this manner, we will be able to highlight periods when the hedging strategy is most or least efficient.

We will then test the VIX ability to be a forward-looking indicator and predictor of SPX price fluctuations. We focus on analyzing whether the VIX can capture the amplitude and turbulence of future price movements. To measure the accuracy of the VIX as a predictor, we use three distinct methods. First, we compare the expected volatility as implied by the VIX and the next 30-day realized volatility (HV) of the SPX. Among the methodologies cited above, the HV is computed here based on the Yang-Zhang annualized volatility estimator described in Appendix 3 and applied in Python. The second method consists of looking at the distribution of the VIX level across several classification thresholds and the related SPX percentage changes in the next 30 days. Depending on where the VIX is, it gives an indication of how the SPX will behave in the near-term future based on its related movements. If high levels of VIX are accompanied by high negative changes in SPX, then it would give empirical evidence that the VIX appears as a forward indicator of future HV. From our analysis, this will be the case. Hence, we use three analyses: 1) confront the VIX level with corresponding next 30-day SPX changes 2) compare the VIX level with corresponding next realized volatility of SPX and 3) comparing volatility changes as implied by VIX changes and HV changes of the SPX.

The methodology of this research relies mainly on two inputs. The first is a data analysis in which we conduct a times series analysis of the VIX and SPX and compute their static and trailing correlations coefficients. We thereby highlight their main statistical properties (stylized facts) and relationship. This input will reflect how the VIX behaves and how it moves given major market events and relative to the SPX. It will most importantly show its mechanisms and how hedging strategies can be constructed. The second input is verifying the forecasting ability of the VIX and if it is an appropriate indicator of future volatility in the US stock market. The ultimate output consists of evaluating whether VIX derivatives are efficient as hedging tools and allow to set a floor on the investment value with exposure to the US stock market as done by the VXTH strategy. The second outcome is evaluating the indexation of the VIX to US portfolios so that volatility indices can be used as a forward-looking index for capital reserves computation by financial institutions.

DATA ANALYSIS

Statistical Properties of the VIX and SPX

The statistical properties of the VIX should give us more insight into the dynamics between market conditions and the level of volatility. This chapter will address the question of which attributes

and behaviors can be extrapolated from the VIX statistical properties and used in developing and implementing effective hedging strategies. Analyzing the average level of the VIX over several periods, we can identify the periods in which volatility was relatively stable or when it was turbulent. Years known in history as turbulent market conditions such as the dotcom bubble of 2000, the Global Financial Crisis of 2008-2009 and the "*great correction*" of 2022 were all marked by high HV and IV. The average mean values of the VIX during these periods were all above the long-term historical average. These values are summarized in Table 2 below. The VIX has an average historical level of 19.63 based on closing values ranging from 1990 to 2023 and of 21.58 based on data from 2018-2023. In contrast, the VIX had levels way above these averages in the three periods above. The period of 2008-2009 was the highest one with an average volatility level of 32.09.

2000-2001	2008-2009	2022	1990-2023	2018-2023
24.52	32.09	25.64	19.63	21.58

Table 2: Average mean of VIX closing values for each respective time interval.

Figure 2 above show that historically the VIX is subject to some seasonality, but it is not a consistent and recurrent trend. Closing values in September 2023 are below the averages recorded over the past three decades. Recently, the VIX is behaving differently compared to historical averages. It will be important to monitor these attributes in the future to extrapolate and implement effective hedging strategies. Observations on intraday ranges can be useful for studying continuous data points rather than discrete ones (close-to-close) as is done here. Using only closing values could underestimate large changes that occurred within the trading day and over smooth volatility calculations.

The VIX simple returns are marked by a higher kurtosis compared to the SPX kurtosis indicating the presence of very heavy tails. The appearance of heavy tail in financial returns creates a limitation of normally distributed models to work properly. Scholars have introduced the use of other parametric distributions such as the t-location scale or Lévy alpha-stable. Non-parametric distributions such as the Kernel density estimator are also appropriate. Combined with the skewness, we can measure whether the tails are asymmetrically or symmetrically distributed. Positive skewness indicates a larger right tail whereas negative skewness indicates a larger left tail. The VIX exhibits a positive skewness whereas the SPX shows a negative. The positive skewness of the VIX returns can be explained by the strong mean-reversion tendency of volatility reducing the number of extreme negative changes and its spiking behavior which increases the number of large and sudden positive changes. The mean-reversion of volatility is a necessary condition for investors to rely on the US stock market as an investment vehicle. If volatility remained high all the time as in the case of crypto assets, many financial institutions would not be allowed to invest.

The left heavy tail of the SPX indicates a higher risk of the investment. On the other hand, the right heavy tail of VIX returns indicates higher risk as it increases with higher volatility. The results below are consistent with the nature of the VIX and SPX. The SPX tail values are the ones market participants tend to hedge with VIX derivatives. The main descriptive statistics of the VIX simple

returns and SPX log returns are summarized in Table 3 below. For a visual representation of these attributes, the distributions for both the VIX and SPX simple returns are illustrated in Figure 7 below. An astonishing observation resides with the close-to-close annualized volatility of the VIX which is very high. Its high value is caused by the occurrence of large returns as the VIX spikes and reverses suddenly and rapidly. This statistical property suggests again that volatility is abnormally high in the US stock market and deviates strongly from rational behaviors.

	Annualized Volatility	Skewness	Kurtosis	Coefficient of Variation	Average Intraday Range
VIX	111.16%	1.90	18.75	30.41	1.56
SPX[12]	19.19%	-0.49	15.73	44.45	24.71

Table 3: Descriptive statistics of VIX simple returns (1990-2023) and SPX log returns (2004-2023).

Financial returns have several attributes and statistical properties. We already mentioned above the leverage effect. The other stylized facts of financial returns are randomness (stochasticity), excess kurtosis (fat/heavy tails), high coefficient of variation and volatility clustering. Study shows that financial returns are not autocorrelated with their past and tend to follow random behaviors. This means that past returns will not have any forecasting power of future returns. For the VIX, this property is not verified. As reflected by the autocorrelation functions, past returns are correlated with future returns. For each initial lag, the autocorrelation does not remain within the confidence bounds showing evidence that VIX returns are not independent.

This observation aligns with another property of financial assets. The volatility clustering indicates that past volatility can be an indication of future volatility. This well-researched property allowed the development of the family of generalized autoregressive conditional heteroskedasticity (GARCH) models. Based on the autocorrelation functions of VIX returns which move outside the confidence bounds, it can be assumed that periods of low volatility are followed by successive periods of low volatility and conversely with high volatility. From our analysis, we can conclude that the VIX does not share similar statistical properties to those of financial assets. Its behavior is fundamentally different and explains why simple and not logarithmic returns are used in this Section.

Correlation Factors of the VIX and SPX

Correlation represents a linear relationship between two random variables. It indicates how two random variables behave against the other. This chapter will confront whether the relationship between the simple returns of the VIX and SPX permits the use of VIX derivatives as an efficient hedging strategy against drawdowns in the US stock market. To be effective, the VIX and SPX

12 Logarithmic returns are applied here for the SPX and annualized volatility is computed based on the close-to-close methodology.

relationship must be consistent over time, meaning that the correlation coefficient should remain stable and most importantly negative for hedging strategies to work. Using the Pearson correlation coefficient, the correlation between the simple returns of the VIX and SPX from 2004 to 2023 is equal to -0.72 showing a very strong negative linear relationship (slope is descending) between these two variables. The negative relationship can be observed in the correlation matrix shown in Figure 7 below. In the upper right and lower left quadrants, we see the SPX returns in function of the VIX returns with the downward slope in red. In the other quadrants, we observe the frequency distribution of SPX and VIX returns respectively. Hedging continuously SPX downside risks over the same period with long VIX derivatives would have worked in theory relatively well. Yet in practice, this hedging would not be feasible over such a long time as holding derivatives contracts on margin would prove to be costly and reduce the profitability of this hedging strategy. Even with long VIX futures with no expiration, the margin requirements are too high to be maintained over several years and appear as an opportunity cost for financial institutions. Instead, we need to find smaller periods in which the negative relationship holds true.

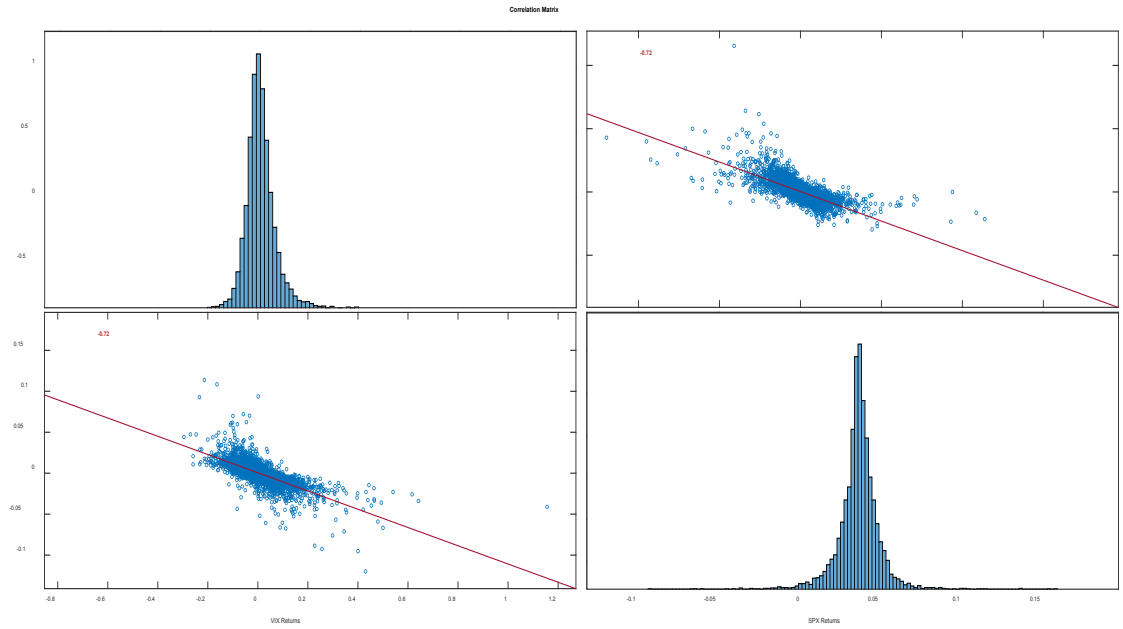


Figure 7: Pearson correlation matrix of VIX and SPX simple returns from March 2004 to August 2023.

Trailing correlations show the continuous dynamics of the SPX and VIX relationship rather than a static one as computed above. Even if the SPX and VIX have a negative correlation, there are many instances where both the VIX and SPX had the same sign and moved in the same direction. From March 2004 to September 2023, 947 observations were recorded. In 2023, 43 instances can be recorded, and July 2023 represented the month with the most instances with 9 observations. Rather than looking at the historical correlation that spans over several years and offset these instances, we will analyze correlation factors within shorter time intervals to capture these individual observations. Because of the standard error equal to 1 divided by the square root of the number of observations, the correlation factors are approximative. However, they are evidence of the two variables' dynamic.

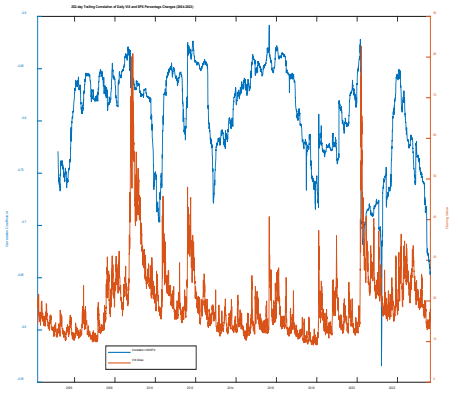
Time varying correlations consider a different approach to understand the changing dynamic of two variables over several time intervals. We use here 21 and 252 rolling trading days for the Pearson correlation found in Appendix 5. Reducing the period reflects better how the relationship dynamically changes over different time intervals. Compared to the correlation factor of -0.72 computed above, using trailing correlations is much more relevant for analyzing the efficiency of a hedging strategy using long VIX derivatives. Correlations might be lower over different time intervals and VIX derivatives will be priced differently according to the respective movements of the SPX and VIX. As shown above, there are time intervals in which co-movements are much more pronounced and frequent than other time intervals. As a result, time varying correlations will be changing.

Based on observations of the 252-day trailing correlation depicted in Figure 8 below, the correlation factor between the SPX and VIX is below 0 at any given time and remains consistent with the historical negative correlation factor. The negative relationship between these two values aligns with the leverage effect and suggests that the VIX was an effective hedge over a 1-year basis in the past. We can assume that the correlation between the VIX and the SPX is nearest to -1 as the VIX is close to its highest value and closest to -0.5 when it is near its lowest value. Looking at the two graphs below, we observe that reducing the time window induces more volatility in the trailing correlation factors. This is caused by the higher weight of each individual movement of both variables on the final computation. Here, the trailing correlation factors are computed on an equal weight basis. To estimate future correlation, it is recommended to use a time-weighted method by increasing the weight of newer observations and decreasing the weight of older observations.

The most important observation of this data analysis is the occurrence of a positive 21-day trailing correlation in July 2023 illustrated in Figure 9 below. Over our sample period, there has been only one occurrence of such a "*decorrelation*" phenomenon and it coincided with the VIX reaching a 2-year low as can be seen from the graph below. The inversion from the long-term correlation factor represents a shortcoming of VIX derivatives to perform as efficient hedging tools within this time interval. Holding long VIX call options as a hedge over those 21 days would have created the opposite effect than anticipated. During the month of July 2023, we observed 9 occurrences out of 21 in which both the VIX and SPX moved in the same direction and consequently had equal signs. What could explain the "*decorrelation*" effect? There are two main explanations of this unique phenomenon.

The first is that the underlying options activity and consequent VIX changes were decorrelated from the SPX movements. SPX options prices reached decade lows and consequently had lower vega values. Greeks' values show the apparent dissociation of options to react properly to movements in the underlying. With low IV, options were mostly sensitive to the theta and the VIX fell to 2-year lows. As a result of OTM options prices moving down independently from movements in the underlying, the VIX moved in the same direction as the SPX on 9 occasions out of 21 trading days. This odd phenomenon goes against the leverage effect but can be observed multiple times. It is well to mention again that the VIX computation approximates the IV of the SPX from option price changes and not its realized volatility. SPX changes will not affect the VIX in the same proportion.

The second interpretation lies with the VIX insensitivity to react rapidly and inversely to SPX changes. If the VIX remains flat due to the ODTE options trading trend and other factors in the options market, correlation will move closer to 0 indicating an absence of relationship. This appears to be the latest and greatest shortcoming of VIX hedging. If the trend accentuates and the VIX continues to be insensitive to material news, then eventually more occurrences of positive trailing correlations could be observed. The fact that the VIX remains flat is also a sign of market stability and positive sentiment. With the absence of fear and other risk perceptions and low volatility expectations, the VIX will be flat. But what explains the differences between observed SPX volatility and expected volatility based on the VIX? To address this question, we need to understand the forecasting ability of the VIX and determine factors that explain a deviation between the observed and expected values.



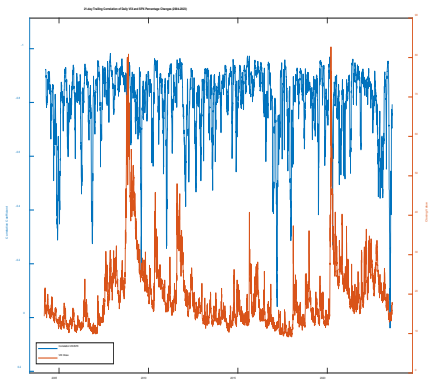


Figure 8: 252-day trailing correlation of VIX and SPX daily percentage changes (2004-2023).
Figure 9: 21-day trailing correlation of VIX and SPX daily percentage changes (2004-2023).

VIX forecasting ability

The VIX can be predictive and yield informational content in terms of future volatility. The main questions addressed in this chapter are what does a high or low VIX imply about the SPX future realized volatility and how can differences between the VIX and SPX next 30-day volatility be explained? The answers to these questions are important in terms of proper risk management and risk transferring via hedging using VIX derivatives.

We consider several classifications for describing the expected movements of the US stock market in the next 30 days. In this analysis, we define a VIX level below 12 to be considered as "*unmoved*"; a level above 12 to be "*stable*"; a level above 20 to be "*unstable*" and a level above 30 to be "*turbulent*". The classification levels were selected based on the VIX descriptive statistics computed above. The VIX had a historical mean close to 20 which was used here as the turning threshold between a stable and unstable level. During the Global Financial Crisis spanning from 2008 to 2009, the average mean was close to 30 suggesting strong turbulence and instability in the US stock market. The threshold of 30 was therefore chosen to classify the "*turbulent*" level. The "*unmoved*" classification is defined for a level of 12 as the VIX rarely remains below this threshold.

Based on our observations and results in Figure 10 depicted below, the VIX has seemingly been somewhat predictive of the subsequent magnitude, amplitude if not direction, of SPX changes. As the VIX moves upward from one classification to the other, the distribution of SPX changes shifts to the left of a 0% change. The mean below 0 for both the "*unstable*" (in yellow) and "*turbulent*" (in red) distributions, respectively equal to -0.07% and -4.90%, suggests that the SPX is more inclined to fall in the next 30 days when the VIX remains above 20. Based on past data, if the VIX crosses the 30-mark threshold, then we can expect a higher probability that the SPX will fall in the next 30 trading days and higher SPX option prices. It is notable to observe that the SPX fell dramatically as the VIX remained above 30 in the past with price changes as low as -32.7%. Moreover, if it remains below 12, we can assume a higher probability of small incremental increases of the SPX in the next 30 days and very low IV pricing of SPX options. For each classification and descriptive state of the US stock market, results here show that the classification levels of the VIX give an apparent warning signal to market participants about the direction and/or amplitude of near-term SPX changes.

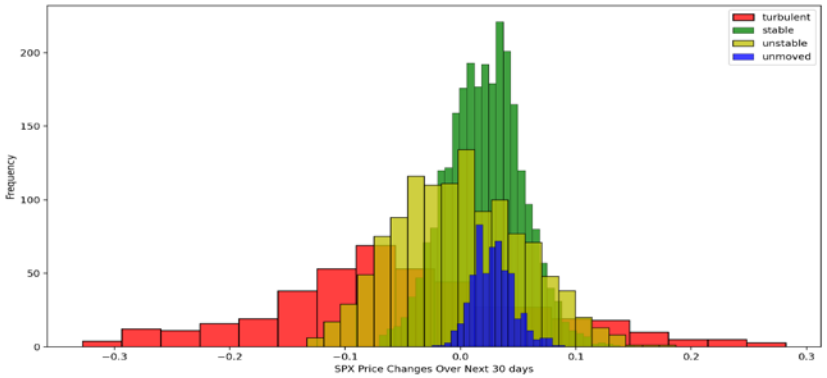


Figure 10: SPX price changes over the next 30 trading days relative to the frequency of the VIX classification levels.

As shown in Figure 11, the VIX is closest to the trailing average of the next 30-day volatility estimator in case of stable and low volatility and tends to diverge as volatility becomes unstable and turbulent. In both 2008 and 2022, the VIX readings strongly lagged those of the SPX. On the other hand, the VIX trailing average surpassed briefly in early 2022 the next realized volatility trailing average. The latter then moved above again as the US stock market hit a 3-year low in October 2022. Using the 252-day trailing averages, it can be assumed that when the VIX crosses the threshold of 20, realized volatility on a 1-year basis as measured by the Yang-Zhang volatility estimator tends to subsequently move up and remain relatively higher to past volatility. The results are again promising for the VIX to estimate the amplitude of future price changes.

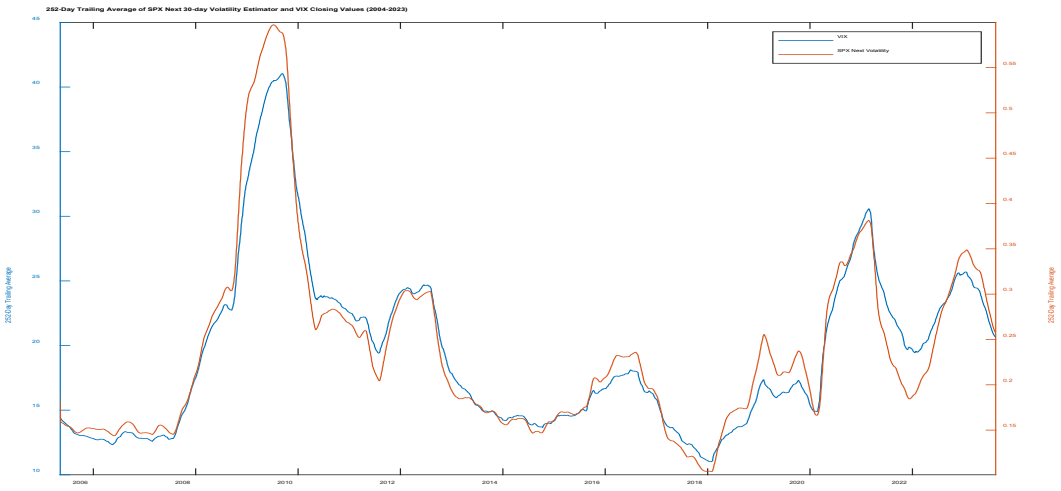


Figure 11: 252-day trailing average of VIX closing values and next 30-day realized volatility of SPX from March 4, 2004 to August 18, 2023.

As illustrated in Figure 12 below, VIX closing values are tracking closely the SPX estimated HV values in the next 30 days, especially under conditions of relatively low volatility. The VIX is much more volatile and spikes frequently whereas the estimated next 30-day realized volatility is smoother. The frequent spiking gives the VIX the ability to anticipate realized volatility but sometimes it overshoots and realized volatility falls earlier back to lower levels. It can also be observed that predictions of the VIX become less precise and lag when realized volatility jumped suddenly in relative high amplitude. These observations can be seen more precisely using a one-year sample window for the 30-day trailing average of the changes for both the VIX and the volatility estimator in Figure 13 below.

These two single factors, the overshooting and lagging of the VIX, explain the deviation between the VIX and the next realized volatility trailing averages. It reminds us that the stock market is highly unpredictable. Sudden jumps in HV are a key characteristic of financial markets subject to a floating pricing mechanism. Even with advanced option pricing models that incorporate jump diffusion, their occurrences ultimately limit the ability of the VIX to perform as a precise forward-looking index. From all analyses above, it can however be concluded that the VIX serves as a fair barometer of future volatility from a historical point of view. Consequently, it can be concluded from these analyses that the VIX appears to be a fair indicator of future volatility and can give early signals as it crosses the 20 marks. Our results shed light on its Achilles' heel which resides in the sudden "*jumping*" of the realized volatility. Under these conditions, the VIX falls behind and takes some time to catch up again.

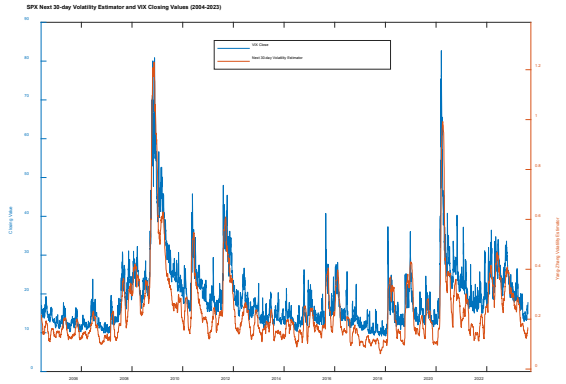


Figure 12: Next 30-day realized volatility of SPX and closing values of the VIX from March 4, 2004 to August 18, 2023.

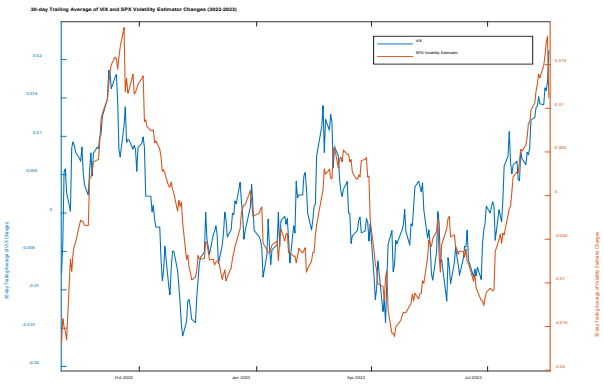


Figure 13: 30-day trailing average of the VIX and SPX volatility estimator changes from August 1, 2022 to August 18, 2023.

CONCLUSION AND RESULTS

The VIX has been subject to a lot of criticism in recent months. As shown above, the VIX is an indicator of market tail risk factors and a fair barometer of future volatility. The VIX has some predictiveness in regard to the subsequent magnitude, if not directional, of SPX changes. Both reviews and results show that volatility indices capture the divergence between rational valuation and irrational behaviors in stock market prices. Its highest level on the historical times series above coordinates with some of the greatest panics and crashes ever recorded in our history. It can be confidently affirmed that the higher its level the higher the exposure of market participants to market risk factors, especially behavioral or "*non rational*" factors.

Even if the same sign occurrences of SPX and VIX are not consistent over time, it led to a so-called "*decorrelation*" effect in July 2023. This observation was also caused by the VIX reaching its lows thus becoming more insensitive to SPX movements. This rare and isolated phenomenon will not prevent the efficiency of VIX derivatives from working as hedging instruments against downside risks, especially SPX tail events. In the advent of such events, the sensitivity of SPX options prices to changes in the underlying will quickly increase thus positively affecting both the leverage effect and the ability of the VIX to jump upwards. The occurrence was mainly caused by specific options market-driven factors and seems not to occur systemically and recurrently. The research here shows how hedging strategies with VIX derivatives can be efficient. As reflected by the performance of the VXTH, it does not only reduce downside risk but can also outperform the SPX when the strategy is implemented over years including strong drawdowns. From our analysis, we observe that in some periods the strategy could be inefficient, and its performance remains time dependent.

The largest threat identified in this paper is the insensitivity of the VIX to react to material news. If ODTE SPX trading continues to increase in proportion, the VIX will not work anymore. At time of writing, the VIX fell below 13 for the third time in 2023, lowest level recorded in the last three

years and way below its historical average. Material news recorded at that time did not show a promising outlook on near-term market conditions, raising the question as to whether the VIX is broken. This paper highlighted that the VIX behaves oddly, and its related derivatives could become inefficient if the VIX sensitivity disappears. In this case, market participants should move towards other volatility indices such as the recently introduced VIX1D to hedge the tails of their positions.

Extrapolating the statistical properties of the VIX and its relationship with the SPX permits us to establish an efficient hedging strategy against market risks. In this paper it was argued that it has even more potential as a risk management tool. The VIX and other volatility indices also serve as a barometer of risk factors and perceptions. Financial institutions should be more prudent and increase their capital reserves as the level is high or substantial spikes can be seen. Results showed that the VIX trailing average was above the SPX HV trailing average in early 2022 the same as in 2008. A cross-over could give an early warning sign of potential strong devaluation in the US stock market.

Classifying VIX levels into several types of market phases or states (unmoved, stable, stable, unstable, turbulent) presents a dynamic approach for risk management processes. In 2022, the VIX consistently remained above the category unstable. In hindsight, any institution with exposure to the US stock market should have increased liquid positions and cash reserves for prudential risk management. Long-term orientated institutions are especially affected by rapid changes in market conditions. If distress is high, herd behaviors can push them to be underfunded for short-term obligations. Such risk factors materialized in the US in March 2023 resulting in the failure of several banks. Cash holdings are an important component in an effective risk management strategy, but they have a high opportunity cost. Our recommendation is that financial institutions given the abnormally high volatility recorded in the last decade always hedge their positions and dynamically change cash holdings over time using an indexation to the classification levels of volatility indices.

The ability of the VIX to approximate future turbulence in US stock markets gives a "*passive*" hedge in terms of a tail event's probability. In times of extreme volatility such as reflected by the VIX spikes on October 22, 2008, and on March 12, 2020, financial markets freeze, and their functioning is jeopardized. Intensified by behavioral factors such as fear and loss of confidence, the real economy is adversely affected as the plumbing of the financial system is broken. Repeatedly observed throughout history, crises and flash crashes are unexpected and can have perilous implications for market participants. As reflected by the results, the VIX tends to lag rapid and sudden increases in realized volatility but the related activity in VIX and SPX options can give valuable information about expectations and the incentive of the market to hedge US stock market risk exposures.

The need for advanced financial engineering is key for the continuous functioning of financial markets. Volatility indices can be part of the solution to improve stability for both financial institutions and markets. Complementary research using entropy and chaos theory could improve our understanding to anticipate future volatility under "*jumping*" conditions. With rising volatility in the bond markets, the development and engineering of hedging strategies with bond volatility indices could also be in the center of future research on this topic.

APPENDIX

Appendix 1

The generalized formula to compute both the VIX and VIX1D values is given as follows:

- For VIX, we have and for VIX1D we have
- is the time to expiration in days
  - The time-to-expiration T is given by the following expression:
  -
  - where is the number of minutes remaining until 12:00 PM of current day; is the number of minutes from 12:00 PM until 8:30 AM on SPX settlement day; is the total number of minutes in the days between current day and settlement day and there are 525,600 minutes per year.

- is the forward index level given by the SPX option prices and is calculated as:
  -
- is the first strike below the forward index level
- is the strike price of i^{th} OTM option: a call if and a put of . If , then both put and call are used
- is the interval between every i^{th} option strike price and forward level
- is the average of the bid and ask quote for each call and put option with strike k_i
- is the continuously compounded risk-free rate (usually approximated by the 10Y US Treasury yield) to expiration T

The components of the VIX are at- and out-of-the-money SPX put and call options with more than 23 calendar days (including exchanges closed days) and less than 37 days to expiration. These include AM-settled SPX options with standard third Friday of the month expiration dates (regular dates of option expiration) and PM-settled weekly SPX options that expire every Friday, except the third Friday of each month. The relevant SPX options "roll" to new contract maturities once every week. On the day before VIX futures and options are set to expire, the VIX is generally calculated using two SPX option expirations: expiration with 24 days (near-term) and expiration with 31 days (next term). On the successive calendar day, the SPX options that expire in 30 days become the near-term options and the SPX options that expire a week later are rolled in as the next term options. The VIX calculation measures time-to-expiration in calendar days and divides each day into minutes to replicate the accuracy used by institutional option and volatility traders. Intraday VIX values are based on snapshots of SPX option bid/ask quotes every 15 seconds. Cboe currently calculates the VIX Index spot values between 2:15 AM CT and 8:15 AM CT (Cboe global trading hours) and between 8:30 AM CT and 3:15 PM CT (Cboe regular trading hours).

Appendix 2

The Heston model is a stochastic volatility model which relies on a dynamic approach of volatility measurement based on a square-root mean-reverting process of the variance and can be used to price vanilla options. It is an extended version of the original Black-Scholes option pricing model in which the volatility in the geometric Brownian motion is held constant over time. This variation of the model allows to model more accurately implied volatility smiles and skews observed in markets. In its basic form, the asset price S_t can be determined with the following stochastic differential equation (SDE):

- is the difference between the continuous risk-free rate and the continuous dividend yield
- is the instantaneous variance given by a Cox-Ingersoll-Ross process such as:
- are Wiener processes with correlation coefficient between the two processes
- is the initial variance
- is the long-term average variance of the price and as time t grows the expected value of tends to
- is the rate at which reverts to (measures the mean-reversion speed)
- is the volatility of the asset's volatility which measures the variance of

Appendix 3

The Yang-Zhang HV estimator incorporates both the opening jumps and drifts and has minimum estimation error. The assumptions of zero drift in other HV estimators overestimate volatility for securities with a non-zero mean return. It is computed as the sum of the overnight volatility, open-to-close volatility, and the Rogers-Satchell HV estimator. The underlying assumption that prices are continuous leaves out the jump-diffusion process observed in stock price time series thus underestimating HV. The estimator is defined as:

- represents the number of trading days in a year equal to 252 to annualize the volatility estimator
- k is the constant defined as:

In Section IV, the computation of k is done with N set to 30.

- is the overnight volatility and calculated by the following variance:

- is the open-to-close (intraday) volatility and given by:

- is the Rogers-Satchell volatility estimator defined as:

Appendix 4

Delta

The delta captures an option's price sensitivity to movements in the price of its underlying asset. It is the first derivative of the option price relative to the underlying price. The delta is given by:

- is the option price
- is the underlying price

As the option moves further ITM, the delta converges to 1 and the gamma to 0. And as it moves further OTM, the delta tends to 0 and gamma to 0 as well. A delta of 1 represents a perfect synchronization between any movement in the underlying and the option price. Option prices increase along the delta.

Gamma

The gamma is the second derivative of price and the first derivative of delta and is a convexity measure. It captures the change in the option's delta in function of the underlying asset price. Whereas the delta

represents the speed of the option price to react on the underlying, the gamma shows the acceleration of the delta change given the underlying price change. Once the delta reaches its maximum or minimum, the acceleration becomes zero. The gamma is given by:

Vega

The vega captures the option's price sensitivity to IV. It calculates the change in the option prices given a 1-point change in IV. Hence, it becomes the first derivative in regard to the IV. It can be computed as follows:

Theta

The theta measures the downward pressure of the time dimension on the option price. It captures the 1-day time decay on the option price. The theta expresses the risk caused by the time value of the option until expiration. It becomes higher (more negative) as we move closer to expiration date thus reflecting the increasing rate of time decay. A theta of -0.150 suggests a loss of $0.15 per day. It can be defined as follows:

- is the option's time to expiration

In general, high HV/IV stocks have a greater theta than low volatility stocks. The time value premium on high volatility stocks is greater as their probability to move ITM is higher. As a result, the time decay is also higher as each day the premium loses more in value.

Appendix 5

The Pearson correlation coefficient is given for a population of random variables X and Y as follows:

- is the covariance between random variables and . In our case, the two random variables of interest are the VIX and SPX percentage changes.
- is the standard deviation of variable
- is the standard deviation of variable

In Section IV, we use the sample Pearson correlation coefficient defined as:

- n is the sample size. In our case, the sample size represents the days used for the computation of the trailing correlation (e.g. 252-day)
- and are the individual sample points. In our case, we have for instance i={1,…,252} for the 252-day trailing correlation
- and are the variables sample mean such as

BIBLIOGRAPHY

1. Bennett, Colin & Gil, Miguel A. (2012). "Measuring Historical Volatility". Santander Equity Derivatives Department. Accessible at [Online]: https://dynamiproject.files.wordpress.com/2016/01/measuring_historic_volatility.pdf

2. Bouchaud, J.-P. & Potters, M. (2003), "Theory of Financial Risks and Derivatives Pricing: From Statistical Physics to Risk Management", 2nd ed. Cambridge: Cambridge University Press.

3. Cboe Global Indices (2022). "Volatility Index Methodology: Cboe Volatility Index". Accessible at [Online]: https://cdn.cboe.com/api/global/us_indices/governance/VIX_Methodology.pdf

4. Cboe Global Indices (2023), "Volatility Index Methodology: Cboe 1-Day Volatility Index", Cboe Global Markets, Accessible at [Online] : https://cdn.cboe.com/api/global/us_indices/governance/Volatility_Index_Methodology_Cboe_1-Day_Volatility_Index.pdf

5. Cboe Global Markets (2023). "Cboe Global Markets Launches 1-Day Volatility Index, Designed to Measure Volatility Over Current Trading Day", Investor relations, Accessible at [Online]: https://ir.cboe.com/news-and-events/2023/04-24-2023/cboe-global-markets-launches-1-day-volatility-index-designed-measure-volatility-over-current-trading-day

6. D'Ecclesia, Rita L. & Kondi, Denis (2017). "Time Varying Correlation: A Key Indicator in Finance". Handbook of Recent Advances in Commodity and Financial Modeling (pp 69-87). Accessible at [Online]: https://link.springer.com/chapter/10.1007/978-3-319-61320-8_4

7. Deng, Geng; McCann, Craig & Wang, Olivia (2012). "Are VIX Futures ETPs Effective Hedges", The Journal of Index Investing. Accessible at [Online]: https://www.pm-research.com/content/iijindinv/3/3/35

8. Du Plessis, Kirk & Hysmith, Ryan (2023). "Portfolio Hedging Strategy with VIX Options", Option Alpha. Accessible at [Online]: https://optionalpha.com/blog/vix-portfolio-hedging-strategy

9. Fang, Fang & Oosterlee, Cornelis W. (2009). "A Novel Pricing Method for European Options Based on Fourier-Cosine Series Expansions". SIAM Journal on Scientific Computing. Volume 31. Issue 2.

10. Glasserman, P., Heidelberger, P. & Shahabuddin, P. (2002), "Portfolio Value at Risk with Heavy Tailed Risk Factors", Mathematical Finance.

11. Goldstein, Daniel G. & Taleb, Nassim Nicholas (2007). "We Don't Quite Know What We Are Talking About When We Talk About Volatility", Accessible at [Online]: http://www-stat.wharton.upenn.edu/~steele/Courses/434/434Context/Volatility/ConfusedVolatility.pdf

12. Heston, Steven L. (1993). "A Closed-Form Solution for Options with Stochastic Volatility with Applications to Bond and Currency Options" The Review of Financial Studies. Volume 6, Issue 2.

13. Kownatzki, Clemens (2016). "How Good is the VIX as a Predictor of Market Risk", Pepperdine University Press. Available at [Online]: http://www.na-businesspress.com/JAF/KownatzkiC_Web16_6_.pdf

14. Lewis, Alan L. (2001). "A Simple Option Formula for General Jump-Diffusion and Other Exponential Levy Processes" Accessible at [Online]: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=282110

15. Lo, Chien-Ling; Shih Pai-Ta; Wang, Yaw-Huei & Yu, Min-Teh (2019). "VIX derivatives: valuation models and empirical evidence". Pacific-Basin Finance Journal, Volume 53. Accessible at [Online]: https://www.sciencedirect.com/science/article/abs/pii/S0927538X18302385

16. Moran, Matt (2023). "How the VIX1D Index Performance Compares to the VIX Index and Other Volatility Indices in 11 Charts", Cboe Global Markets, Accessible at [Online]: https://www.cboe.com/insights/posts/how-the-vix-1-d-index-performance-compares-to-the-vix-index-and-other-volatility-indices-in-11-charts/

17. Moran, Matt (2023). "How the VIX1D Index Performance Compares to the VIX Index and Other Volatility Indices in 11 Charts", Cboe Global Markets. Accessible at [Online]: https://www.cboe.com/insights/posts/how-the-vix-1-d-index-performance-compares-to-the-vix-index-and-other-volatility-indices-in-11-charts/#:~:text=The%20average%20of%20the%20VIX1D,84.3%20for%20the%20VIX%20Index

18. Moran, Matthew T. & Liu, Berlinda (2020), "The VIX Index and Volatility-Based Global Indexes and Trading Instruments - A Guide to Investment and Trading Features". CFA Institute Research Foundation Briefs. Accessible at [Online]: papers.ssrn.com/sol3/papers.cfm?abstract_id=3668983

19. Noël, Valérie (2023). "Frénésie autour des «Zero Day Options»", AGEFI. Accessible at [Online]: https://agefi.com/actualites/marches/frenesie-autour-des-zero-day-options

20. Orlando, Giuseppe & Taglialatela, Giovanni (2017). "A review on Implied Volatility Calculation". Journal of Computational and Applied Mathematics. Accessible at [Online]: https://www.sciencedirect.com/science/article/pii/S0377042717300602

21. Rhoads, Russell (2011). "Trading VIX Derivatives: Trading and Hedging Strategies Using VIX Futures, Options, and Exchange-Traded Notes", Wiley 1st Edition.

22. Sosnick, Steve (2023). "Have Zero-Dated Options Broken the VIX", Interactive Brokers, Accessible at [Online]: https://ibkrcampus.com/traders-insight/securities/options/

have-zero-dated-options-broken-vix/

23. Wang, Lu (2022), "VIX's Tandem Swings With S&P500 Show Options Obsession Persists", Bloomberg News, Accessible at [Online]: https://www.bloomberg.com/news/articles/2022-10-24/vix-s-tandem-swings-with-s-p-500-show-options-obsession-persists

24. Wigglesworth, Robin (2023). "The "broken" Vix", Financial Times, Accessible at [Online]: https://www.ft.com/content/90224106-f6a2-4ca9-b053-77f51a493677

25. Wong, A.S.K & Vlaar, Peter J.G. (2003). "Modelling time-varying correlations of financial markets". De Nederlandsche Bank. Econometric Research and Special Studies Department. Accessible at [Online]: https://www.researchgate.net/publication/4799583_Modelling_time-varying_correlations_of_financial_markets

26. Xu, Mandy (2023). "VIX Options Volume on Pace to Exceed 2017 Record", Cboe Global Markets. Accessible at [Online]: https://www.cboe.com/insights/posts/vix-options-volume-on-pace-to-exceed-2017-record/

27. Xu, Mandy (2023). "Volatility Insights: Evaluating the Market Impact of SPX ODTE Options", Cboe Global Markets. Accessible at [Online]: https://www.cboe.com/insights/posts/volatility-insights-evaluating-the-market-impact-of-spx-0-dte-options/

28. Yang, Dennis & Zhang, Qiang (2000). "Drift-Independent Volatility Estimation Based on High, Low, Open, and Close Prices". The Journal of Business, Vol. 73, No.3. Accessible at [Online]: https://www.jstor.org/stable/10.1086/209650

29. Zournatzidou, Georgia & Floros, Christos (2023). "Hurst Exponent Analysis: Evidence from Volatility Indices and the Volatility of Volatility Indices". Department of Accounting and Finance, Hellenic Mediterranean University. Available at [Online]: https://www.mdpi.com/1911-8074/16/5/272

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THE PURPLE OCEAN STRATEGY, A MIDDLE GROUND BETWEEN THE BLUE AND RED OCEAN BUSINESS STRATEGIES

Manuela Pacheco Tavares Ferreira

ABSTRACT: *The Purple Ocean Strategy was created as a combined and optimal aftermath of the Blue and Red Ocean Strategies within business management. After the analysis and evaluation of the Blue Ocean Strategies study, flaws in this business methodology were spotted. The Blue Ocean concept opines that businesses must focus on innovation and not on competition. This document shows how this strategy is outdated. Further, the Blus Ocean study highlights how Red Oceans are detrimental to organizations and should be avoided at all costs. This document refutes the argument by showing successful businesses that face extremely saturated markets and still benefit from competition.*

This paper gathers both the concepts and merges them into the Purple Ocean Strategies. This new concept defends the following business strategies: be innovative and flexible as needed, expand and capture new markets when possible, ensure brand awareness by having a privileged location, and fight against the inevitable competition by understanding their gaps and giving consumers an effective solution.

KEYWORDS: innovation, competition, blue ocean, purple ocean, red ocean

The Blue Ocean Strategy and the Red Ocean Strategy concepts were invented by the economist and business theorist Renée Mauborgne and Professor Chan Kim. Together, they published the bestseller Blue Ocean Strategy book in 2004. It described and analysed what makes a business "blue" and how companies should always aim for Blue Ocean's Strategies instead of the red ones. The book compares both strategies, emphasising how businesses either compete in existing market space or potentially thrive by creating a new market. This document will convey further analysis of both strategies, showing that there are, in truth, weaknesses in the Blue Ocean Strategies and strengths in the Red Ocean Strategies. Then, the report will exhibit a new and optimal common ground between both strategies, The Purple Ocean Strategy.

EXPLANATION OF THE BLUE OCEAN STRATEGY

The core idea of a Blue Ocean Strategy is that a business should create uncontested market space to perhaps become a monopoly within its segment. This strategy is achieved by disregarding competition and creating something new, something that will generate a new necessity or want within a target market. This theory motivates and instructs businesspeople to expand the market, boosting the economy. The Blue Ocean Strategy accentuates that a business needs to constantly innovate to master adaptation in a continuously changing world. The book promotes this approach by highlighting large companies, showing how they succeeded and how the reader could also prosper. Additionally, most people prefer the Blue Ocean method, having the philosophy of "Why compete for market share when I can create my own?" (The Blue Ocean Strategy Summary, n.d). It indeed makes sense; if an organisation could avoid an overdeveloped and saturated market, why wouldn't they?

Example of a Successful Blue Ocean Business

The book claims that there are abundant opportunities for new profitable markets. The *Cirque Du Soleil* is an example given of a successful business that captured the market space by being visionary. This organisation based itself on an already existing entertainment industry, the circus. However, they created a different approach; they made the absence of the animals and took a more theatrical, character driven method, apart from going to their customers by travelling to their cities (Cirque du Soleil, 2023). This contemporary circus invented in the 1980s is a remarkable example in the Blue Ocean Strategies book. The reason is that this organisation was created out of a declining industry and, by 2015, was worth approximately $1.5 billion. Back in the 1980s, there were not many people interested in this sort of entertainment; children and adults had their focus elsewhere. Regardless, Guy Laliberté, the founder of Circus du Soleil, believed in his passion and proved the statistics wrong that his business, which had limited potential growth, would flourish.

EXPLANATION OF THE RED OCEAN STRATEGY

Red Ocean Strategy denotes businesses that compete in existing markets, having an existing demand, and need to align with strategic choices of product differentiation over price. In Red Ocean Strategies, companies fight for the customer's preferability while trying to outperform their rivals (The Blue Ocean Strategy Summary, n.d). Due to this endless competition, business owners tend to prefer avoiding Red Oceans, however, that is impossible in the business world. The trickiest part about any Blue Ocean strategized business is that it eventually becomes a Red Ocean, sooner or later. There is, however, a tendency for Blue Oceans to become Red at a fast pace, since time is money, and brand awareness is key. Plagiarism and other forms of "ideas" on which a business bases itself remains vulnerable further proving that the Blue Ocean Strategy is utopic and often unrealistic for most corporations.

Example of a Successful Red Ocean Business

Donkey Republic is a business that created a new customer need. It was the first brand to introduce renting bicycles through an application, which allowed people to have a cheap, easy, and fun

form of transportation. The company, however, soon suffered from high levels of competition. Nowadays, there are plenty of other bicycle renting apps, like Lime, Tier, and Vogo. With time, the target market was spread within the similar brands. Once that happened, Donkey Republic was forced to lower its product prices. Thus, even though Donkey Republic created a market whose balance was in their favour - eventually the competition negatively influenced its sales and net profit, forcing the company to go from a Blue Ocean to a Red Ocean market. Regardless of that, the company is succeeding and generating exponential financial growth.

Pejorative Connotation & Remote Success

Although Red Ocean Strategies based business indeed have many challenges, it's important to take into consideration that the Blue Ocean Strategy study uses pejorative and quite graphical words to represent an exploited market. Words such as "cutthroat competition" and even the very name "red" representing blood being shed. This derogatory choice of words unconsciously influences peoples' minds to think that, certainly, for businesses to thrive, they need to be under the Blue Ocean Strategy. However, that is not the case; businesses can have high levels of competition and still succeed with a high level of demand.

In Paris, for instance, there is a street called Boulevard de Magenta, located in the Night and the Tenth arrondissements. Here, one finds over twenty stores which sell wedding related products and facilities. Customers can buy dresses, suits, shoes, desserts, decorations, etc. from any of the multiple stores. Here, competition is helping competition. This is happening because when competition is close together, they can support each other. This is the case because brand awareness and location are essential for any company to succeed. Having a business located somewhere its target market particularly goes to buy the product in which you sell is of immense value. In the wedding business having a store on Boulevard de Magenta allows the market to broaden as customers of other brands can also come to you. Hence, businesses can use Red Ocean Strategies to their advantage.

FLAWS IN THE BLUE OCEAN STRATEGY

Lack of Data on the Rate of Successful Business

The Blue Ocean Strategy book gives strategic analyses highlighting potential risks and how organisations can avoid them. It also provides frameworks that teach readers how to organise their ideas to identify market opportunities. On the one hand, these and other factors can be very beneficial for the audience to understand the concept of Blue Ocean Strategies and apply them in real life. Conversely, it is important to be aware that what is being described in the book is often a utopic scenario. The book only briefly mentions that they do not have any data on the success rate of either the red or the blue ocean business initiatives, implying lack of conclusive data on how many businesses have failed to take accountability for the so-renowned Blue Ocean Strategies. It's also important to stress that inventing a new industry is even more risky than already knowing people's interests and needs in a product/service. As there is no data on how many innovative businesses became successful and how many became bankrupt, it can be stated that successful innovative organisations have had "luck" as their main source of prosperity.

Globalisation and its Implications

Globalisation directly impacts innovation and economic globalisation specifically is the process merging the world into a single market, where goods and services become homogeneous (Oxford, 2023). As the world is becoming increasingly globalised, the market is unifying. Quoting the book, "As trade barriers between nations and regions are dismantled and as information on products and prices becomes instantly and globally available, niche markets and havens for monopoly continue to disappear.".

Having said that, the foundations of the Blue Ocean Strategy remain: create uncontested market space, make competition irrelevant, create new demand, and break the value-cost trade-off (The Blue Ocean Strategy Summary, n.d). Yet, in the contemporary environment where supply is exceeding demand, competition is almost inescapable, and companies are being forced to lower product prices due to a unified market. That points out that businesses are not only being unoriginal, but *they are competing to be different*. This means that businesses indeed take other businesses into account to compete against them, highlighting inevitable competition. This indicates that the Blue Ocean Strategy might be faltering and slowly losing its position being the best scenario for a business to aim for.

PURPLE OCEAN STRATEGY: THE MIDDLE GROUND STRATEGY

As seen previously, both the Blue Ocean Strategies and the Red Ocean Strategies have their strengths and weaknesses. Each of these strategies falls on the extreme opposite sides of the spectrum. Hence, to enhance business performance, the Purple Ocean Strategies was created which aims for each strategy's strengths. The tenets of the Purple Ocean Strategies are: to be innovative and flexible as needed, expand and capture new markets when possible, ensure brand awareness by having a privileged location, and fight against inevitable competition by understanding their gaps and giving consumers an effective solution. After mastering these, the business can be customers' top-of-mind brand for that particular industry.

An example of a business that follows these strategies is the restaurant *Yacht Club de Genève*. The restaurant has a particular feature that most other restaurants in Geneva lack - the view of *Lac Leman*. Many companies are victims of their own budgets. As the restaurant is established in the *Quai de Cologny*, its formidable location permits brand awareness, as many people drive in that street every day. Moreover, its location is far enough from the competition to be privileged but close enough for customers to pick where to go. One of Yacht Club de Genève's few eminent competitors is the restaurant *La Belotte*, which is 1.5 kilometres away. If compared to La Belotte, Yacht Club seems to be more flexible and innovative. One example of innovation is that, in order for a person to be Yacht Club's client, they need to have a membership. This uniqueness makes the restaurant more desirable, as the feeling of scarcity affects human judgment. Furthermore, an example of flexibility is that, in winter, the restaurant allows the customers to sit in an igloo-looking tent, which creates a comfortable atmosphere. In summer, the tables are allocated outside allowing patrons to practice sailing on the lake while enjoying the restaurant's facilities. Therefore, the Purple Ocean Strategy is all about making a business unique by having privileged factors, taking competition into account and competing by being flexible and innovative while aiming to be the first brand in people's minds.

CONCLUSION

In conclusion, the Blue Ocean Strategy describes a utopic scenario, where businesses would be innovative, and create uncontested market space. These strategies are slowly becoming obsolete as the global market is unifying while competition is increasing geographically. This report highlights that the Red Ocean Strategies have advantages which should be taken into consideration. Furthermore, a common ground between both the strategies has been created: the Purple Ocean Strategy, which combines both innovating, adapting, and being flexible with fighting and winning competition.

BIBLIOGRAPHY

1. Blue Ocean Strategy. (n.d.). What Are Red and Blue Oceans? [online] Available at:

   https://www.blueoceanstrategy.com/what-are-red-blue-oceans/ [Accessed 3 Dec. 2023].

2. Cirque du Soleil (2023). [online] Available at: https://en.wikipedia.org/wiki/Cirque_du_Soleil#:~:text=Its%20theatrical%2C%20character% 2Ddriven%20approach [Accessed 26 Dec. 2023].

3. Jackson, T. (2023). *The Blue Ocean Strategy Summary (With 4 Examples) | ClearPoint Strategy*. [online] www.clearpointstrategy.com. Available at: https://www.clearpointstrategy.com/blog/blue-ocean-strategy.

4. Oxford (2023), [online] Available at: https://www.oxfordreference.com/display/10.1093/oi/authority.20110803095855259#:~:text=In%20a%20general%20sense%2C%20the,%2C%20religious%2C%20and%20social%20systems. 5≤

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CONTRAST IN COMMAND: THE INFLUENTIAL LEADERSHIP STYLE OF DOUG MCMILLON AND DONALD TRUMP

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ABSTRACT: *The case study aims to explore the distinctive leadership styles of two influential American figures: Doug McMillon, the youngest CEO of Walmart for ten years (Forbes 2024), and Donald Trump, real estate developer and former president of the United States of America.*

These two iconic businessmen have achieved significant success in their respective areas, while their approaches to leadership are vastly different. Doug McMillon is known for his transformative and inclusive leadership style. He is currently steering Walmart towards innovative strategies and sustainable practices such as "harvesting wind and solar energy sources to facilitate" their company (Walmart, 2023). In contrast, Donald Trump, exhibits a more authoritarian and charismatic style. He displays a strong media presence and has a one-sided decision-making process (Jacobs & Niquette, 2021). Leadership is often socio-cultural, meaning that it rises out of environmental needs. In contemporary times it is argued that due to increased focus on education followers no longer need overwhelming directives to get a job done. Leadership has therefore shifted to being less task oriented and more human oriented (Blake & Mouton, 1964). However, through the following case study this theoretical debate comes into question. This case study aims to provide a comparison of their methodologies, highlighting how different leadership styles can be effective in different contexts, and the impacts they have on their organizations and followers.

KEYWORDS: leadership, McMillon, Trump, organizations, methodologies.

MCMILLON

Having been working at Walmart in senior leadership roles for over 30 years, Doug McMillon is known for his people centric approach and forward thinking. For Walmart he has focused on improving employee's lives, sustainability, and technology integration. His transformational leadership style has inspired and motivated employees as he values diversity and establishes an inclusive workplace culture. "*Transformational leadership aims at improving the followers' performance and developing their potential maximally. Leaders who portray transformational leadership usually possess exceedingly strong internal values and ideals*" (Campos 2020). Doug McMillon follows this principle as he has invested in his Walmart employees to

become better, more productive people by increasing "*wages, benefits and education—including a debt-free college program and an expanded parental leave policy*" (Walmart 2024).Due to his various experiences at Walmart starting from loading up trucks when he was seventeen, Doug values the hard work of every employee and aims to guide his employees for success in and outside of Walmart. Through his many personal work experiences at Walmart such as in clothing, baby food, and in apparel before reaching CEO, Doug has expressed open communication and encourages feedback from all levels and employees. He embodies transformational leadership by having a "*focus on the leader-follower relationship wherein the leader provides individualized consideration to followers in order to inspire them and thus work toward enhancing the organization*" (Martin, 2013).

In relation to Goleman's Leadership style, Doug McMillon's actions as CEO embodies a visionary leadership style. When changes require a new vision, or when a clear direction was needed such as during the COVID 19 pandemic, Doug McMillon rose to the occasion. He oversaw the launch of the Walmart+ membership program which advertised business, express delivery, and curb side pickup (Tobin & Towey, 2023). He also aided in providing essential goods to low-income shoppers.

Figure 1: Doug McMillon on the left and his Walmart+ app creation in use of the feature curb side pickup during the COVID 19 Pandemic.

Furthermore, Doug's actions reinforce the emotional intelligence competencies of self-confidence, empathy, and being a change catalyst when following the murder of George Floyd. McMillon condemned racial violence and donated $14 million to 16 different nonprofit organizations to fight systemic racism (Tobin & Towey, 2023). He recognized pain, injustice, and was able to contribute to a meaningful change. His quick approach to this movement to fight systemic racism, fosters a culture of inclusivity and puts Walmart as a socially responsible entity. Doug McMillon's leadership style reflects adaptability, especially in the rapidly evolving retail industry, Walmart is a top competitor. To prosper he must focus on serving the needs of both employees and customers. By serving others, he creates a positive and productive work environment. He values his associates and knows "*his people make a difference*" (Ignatius, 2017). He is adaptable, approachable, and committed to serving others, which greatly contributes to Walmart's huge growth and success.

DONALD TRUMP

Before becoming president of the United States of America in 2017, Donald J. Trump has been in public eye since the 1980's when he first gained attention in real estate, publishing a best seller, and then starting a career in the entertainment industry (History Editors, 2023).Throughout his career he has made millions, employed thousands of people, and has had numerous supporters. By focusing on when he was president, his style aligns with the authoritarian aspects of *Classical Management Theory* and has some aspects of transactional leadership.

Authoritarian leaders often make decisions on their own without consulting other people on their team (Miller, 2024). During his presidency, Donald Trump highlighted this by his frequent use of the executive orders to bypass legislative processes. "*The Times reviewed that Trump has signed since inauguration day, 101 executive orders*" (Bierman, 2019). His supporters view his approach as being strong and taking decisive action. Usually, implementing new policies and fulfilling campaign promises is a prolonged process. However, with the executive orders he demonstrates his commitment to the people without delay.

Following authoritarian leadership style, Donald Trump conducts a top-down approach in decision making and uses a provocative communication style. Not a common political tool for communication, Trump would tweet on the platform Twitter about nine times per day (Shear, *et al*. 2019). No one could stop him once he would retrieve his phone and open the application, demonstrating his dominance and assertiveness. Usually stirring the pot by criticizing opponents or announcing major decisions which led to become breaking news in many instances. This unconventional method shows Trumps willingness to challenge the status quo and his leadership tactic provides a new way to communicate and build relationships with his supporters.

An often-rigid approach, Trump emphasizes efficiency, control, and focuses on results. Through transactional leadership style, he rewards loyalty and results but punishes by dismissing those who do not align with his methods. Trump allows subordinates leeway, but if they step out of line, or disagree with him, Trump's famous phrase, "You're fired!" is his immediate response. Although it can be seen as controversial, this approach is a way to ensure high performance and accountability within his administration. Mr. Trump holds the highest record yet for White House and cabinet turnover rate in a president's first term (Lu & Yourish, 2020). As an authoritarian leader, followers view this as Trump doing what he believes is best for the country. Moreover, he displays certain traits which increase his appeal among supporters and aligns with a classical authoritarian leader such as: confidence, optimism, and demonstrating an attitude where he can do it all.

Figure 2: Donald Trump on the left and on the right, him signing an executive order.

CONCLUSION

In conclusion, this case study has illuminated the contrasting leadership styles of Donald Trump and Doug McMillon which offer valuable insights into effective management. The authoritative and direct approach like Trump's demonstrates the impact of a decisive, charismatic and strong leader. Conversly, McMillon's transformational leadership at Walmart highlights adaptability, innovation, and a collective vision. This comparison shows the diversity of effective leadership styles but also challenges the theoretical debate around task-oriented vs human-oriented leadership. Both demonstrate being successful leaders as they influence and guide others toward common goals, whether in politics or in global commerce. Through this analysis it becomes evident that the effectiveness of different leadership styles depends also on the demands of the situation and goals of the organization.

BIBLIOGRAPHY

1. Bierman, N. (2019) What's behind all those executive orders Trump loves to sign? Not Much. Must Reads: What's behind all those executive orders Trump loves to sign? Not much *Los Angeles Times*.
2. Campos, A. (2020) Transformational Leadership Theory. *Transformational Leadership Theory (psu.edu)*
3. Forbes (2024) Doug McMillon. *Forbes*.
4. History Editors (2023) Donald Trump. Donald Trump: Presidency, Family, Education | *HISTORY*.
5. Ignatius, A. (2017) An Inside Look at the Ups and Downs of Walmart's Journey.
6. Jacobs, Jennifer & Niquette, M. (2021) Trump Plans to Regain Social Media Presence with New Company. Trump Announces 'Truth Social' Platform, 'Trump Media and Technology Group.' *Bloomberg*.
7. Lu, D & Yourish, K. (2020) The Turnover at the Top of the Trump Administration. *The New York Times (nytimes.com)*
8. Martin, R. (2013). Relationship as a Core of Effective Leadership. Low Intensity Conflict & Law Enforcement. 13. 76. Page 76
9. Miller, K. (2024) 15 Advantages and Disadvantages of The Authoritarian Leadership Style. *FutureofWorking.com*
10. Towey, H. & Tobin, B. (2023) How Walmart CEO Doug McMillon went from unloading Walmart trucks as teen to earning $25.7 million a year while modernizing the company. *Business Insider*.
11. Ugochukwu, C. (2024) Transformational Leadership Style: How To Inspire and Motivate. *Transformational Leadership Theory: Inspire & Motivate*
12. Walmart (2024) Doug McMillon. President and CEO. *Walmart Inc.*

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“We know the past but cannot control it.
We control the future but cannot know it.

Claude Shannon

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