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BBA Dissertation

The Impact of Cultural Indulgence on Overconfidence and Return Expectations

A Comparative Analysis of Retail Investors in France and Mexico

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Executive Summary

This dissertation examines how happiness sentiment influences overconfidence and return expectations in retail investors, focusing on a cross-cultural analysis between France and Mexico using Hofstede's Indulgence versus Restraint cultural dimension. The study responds to the surge in retail investor participation, driven by online trading platforms and the COVID-19 pandemic, by exploring how cultural factors affect investor behavior and financial decision-making.

The research utilizes both quantitative and experimental approaches. Linear regression models were employed to analyze the relationship between public interest in national holidays—measured via Google Trends—and stock market performance. Findings suggest that increased public interest in Mexican Independence Day correlates with lower IPC closing values but slightly higher daily returns, indicating a mixed effects of cultural sentiments on market outcomes. Conversely, Bastille Day in France showed no significant effect on the CAC 40 index.

An experimental component involved a cash-out game to assess overconfidence among Mexican and French participants. Positive imagery was used to induce happiness sentiment, and a t-test was conducted to compare the overconfidence levels between the two groups. Results indicated that Mexican participants, reflecting higher indulgence scores, displayed greater overconfidence by continuing in more rounds than their French counterparts.

The dissertation's findings have practical implications for different stakeholders. Retail investors and finance professionals should adopt debiasing techniques to manage overconfidence and make more informed financial decisions. Organizations can tailor financial plans and design investment products that align with the behavioral tendencies of different cultural groups. Educational initiatives and investment platforms should provide resources and tools to help investors accurately assess risk and stay grounded in their market expectations.

This work contributes to Cultural Finance by integrating Hofstede's cultural dimensions with behavioral finance theories, emphasizing the importance of cultural factors in financial decision-making, and providing a basis for further research in various cultural contexts.

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Introduction

Surge in Retail Investment and Online Trading Platforms

Retail investors are becoming increasingly more active in financial markets. This can mainly be attributed to the ease in which these non-professional market participants can access the stock market through online trading apps, which offer low commissions and trading costs and can be used from mobile devices (Ozik, Sadka and Shen, 2021). The number of active users in leading online trading apps worldwide surged from approximately 1.2 million in January 2017 to over 16 million in July 2021, an increase of 1288% in just over four years (Airnow, 2021). Furthermore, Interactive Brokers, one of the most important online trading platforms globally has reported a significant increase in daily trades from an average of 1,155,000 in 2014 to 3,347,000 in 2022 (Interactive Brokers, 2023). Overall, the global online trading market was valued at USD 10.96 billion in 2023 and is projected to grow at a compound annual growth rate of 7 percent per year, reaching USD 14.36 billion by 2027 (The Business Research Company, 2024).

Covid-19 Pandemic Influence on Retail Investment Trends

Retail investing also saw a marked increased thanks to the COVID-19 pandemic. During the initial wave of lockdowns, contrary to the expectation that market activity would decrease, retail stock trading actually surged (Sigalas, 2023). This can be partially attributed to the newfound free time the lockdowns brought to individuals (Ozik, Sadka and Shen, 2021). The COVID-19 pandemic also saw an increase in trading intensity and in new individuals participating in financial markets (Ortmann, Pelster and Wengerek, 2020; Lamdin, 2023). This rise in retail investors' participation in the financial market during the pandemic period helped mitigate the illiquidity caused by the drying up of institutional liquidity (Ozik, Sadka and Shen, 2021). This increase in retail investor activity, mainly kick started thanks to the COVID-19 pandemic, is one of the main factors driving the New York Stock Exchange to poll market participants about the advantages of trading stocks around the clock, 24/7, for the first time (Hughes, 2024)

Role of Retail Investors in Market Dynamics and Price Efficiency

The importance of retail investors in financial markets was not something exclusive of the COVID-19 Pandemic. Retail investors enhance price efficiency by aligning their trades with

permanent price changes and accelerating the information from scheduled and unscheduled news to be impounded into prices (Chen, 2020). These findings are further supported by Bian, Li and Yan (2021) who found that retail investors can play an important role in the information discovery and dissemination. Retail investors ask value-relevant questions to management during earnings communication conferences, which can impact stock market reactions. Additionally, a higher number of retail investors in a firm is associated stock price synchronicity (Wu and Rui, 2022). Retail investors were also behind the 1,000% increase in Hertz's share price after in failed for bankruptcy in May 2020 and the short squeeze of GameStop in January 2021 (Bian, Li and Yan, 2021; van der Beck and Jaunin, 2021).

Behavioral Finance: Psychological Biases in Retail Investment

Delving into how retail investors behave, it has been seen that retail investors tend to make systematic errors due to psychological biases (Chen, 2020). These findings are part of an expanding field of study known as "Behavioral Finance", which makes the argument that the "process of making investment decisions is influenced by different behavioral biases, which encourage investors to depart from rationality and make irrational investment decisions." Some examples of such irrational decision making include selling winning stocks too early and holding losing stocks too long (Odean, 1997; Weber and Camerer, 1998; Grinblatt and Keloharju, 2001b), preferring to invest in stocks of companies that share a similar geographical, linguistic, and cultural background with the investor (Lewis, 1999; Grinblatt and Keloharju, 2001a; Riff and Yagil, 2021) and to a very significant extent in the company or industry where they work (Benartzi, 2001; Døskeland and Hvide, 2011). Retail investors tend to more stocks that attract attention—stocks with unusual trading volume, extreme one-day returns, and news coverage—in comparison to non-attention grabbing stocks. On the other hand, they do not face the same challenges when selling their stocks and tend to sell only the stocks they already own (Barber and Odean, 2008). The likeability of stock ticker symbols and their pronounceability has even been identified to be correlated with stocks' Tobin's Q, a proxy for the market value of a stock (Xing, Anderson and Hu, 2016).

Overconfidence and Its Impact on Investment Decisions

A critical behavioral bias that investors tend to display is overconfidence. Overconfidence is characterized by excessive certainty in one's information, believing oneself to be better than others, and overestimating one's abilities, performance, and chances of success (Moore and

Healy, 2008; Duxbury, 2015). In stock markets investors tend to overstate their capacity to forecast market movements, pick performing stocks and achieve appropriate market timing (Kufepaksi, 2011; Huisman, van der Sar and Zwinkels, 2012). Some of the major consequences of overconfidence are excess trading, which can be accompanied by lower net portfolio performance (Barber and Odean, 2000; Statman, Thorley and Vorkink, 2006; Glaser and Weber, 2007), perceiving the market as less risky than it actually is (Odean, 1998), portfolio under diversification (Merkle, 2016; Pak and Chatterjee, 2016; Broekema and Kramer, 2021) and even lead to future stock price crash risk (Yang, Hou and Yi, 2018) and lower stock returns and overvaluation at the firm level (Adebambo and Yan, 2018)

Dual-Process System for Decision Making

A dangerous aspect to consider about biases is that individuals often engage in them without being aware of it. This situation is explained by the fact that human beings possess two systems for decision making (Sloman, 2002). The first is rational, characterized by its logical and slow nature, and decisions are made through conscious reasoning and deliberation. The second is intuitive, where individuals arrive at decisions fast without conscious reasoning, often based on emotions and gut feeling. Individuals usually depend on their intuitive system to make quick and efficient decisions. On the other hand, the rational system is activated when objective responses or justifications are required. Despite attempts to suppress it, the intuitive system often intrudes on the rational system by persisting in generating responses. Even when the rational system recognizes the decisiveness of its argument, the intuitive system's responses remain compelling and automatic. This intrusion is demonstrated by the fact that the rational system can suppress the responses of the intuitive system. Still, the intuitive system always has its opinion heard and can hinder individuals' attempts to make rational decisions. These findings are supported by neurophysiological evidence (Kuo *et al.*, 2009).

Potential Harm from Psychological Biases in Finance

Investors can do serious damage to their wealth if they let psychological biases and emotions influence their financial decision making (Baker and Nofsinger, 2002). Kahneman and Riepe (1998, p. 53) comment that “investors who are prone to these biases will take risks that they do not acknowledge, experience outcomes that they did not anticipate, will be prone to unjustified trading, and may end up blaming themselves or others when outcomes are bad.” The overconfidence bias can lead to such wealth destruction and overall negative consequences for

retail investors. This dissertation focuses on analyzing overconfidence, and the closely related concept of stock returns expectations, as it is one of the most consequential biases showcased by investors. Plous (2007, p. 217) states that "no problem in judgment and decision making is more prevalent and more potentially catastrophic than overconfidence." DeBondt and Thaler (1994) argue that "perhaps the most robust finding in the psychology of judgment is that people are overconfident." Moreover, this dissertation focuses on overconfidence in retail investors. The democratization of channels to invest in capital markets has led to an increasing number of people deciding to invest in their own accounts. As Baker and Nofsinger (2002) highlights "understanding the psychological basis for investor errors and taking appropriate actions to correct such errors may reduce their effects on investment decisions and potentially lead to improved investment results". Ahmad (2022) further says that "the skillful understanding and knowledge of the cognitive heuristic-driven biases will help the investors […] overcome the adverse effect of these behavioral biases in the stock market." As such, showcasing that retail investors are prone to exhibiting the overconfidence bias in investing decisions will help them reduce it and, therefore, the negative consequences that it entails. The effect of warning against overconfidence has already proven to be effective. Kaustia and Perttula (2012) measured the overconfidence of one half of their study participants. The other half attended a 1.5-hour lecture on investor psychology covering the topic of overconfidence, including its different facets. The results indicated that the participants that attended the lecture exhibited less overconfidence than those who did not attend the lecture.

Cultural and Psychological Analysis of Happiness and Overconfidence

Furthermore, this dissertation examines the happiness sentiment of retail investors by utilizing the most widely used framework of analysis within the specialized literature on the international study of national cultures the Hofstede Model of Six Dimensions of National Cultures (Hsu, Woodside and Marshall, 2013). More specifically, this dissertation aims to explore the Indulgence versus Restraint Dimension innovatively, the latest one added into the model and the most under-searched (Guo *et al.*, 2018; Sun *et al.*, 2019) by comparing France and Mexico—a comparison seldom made in existing studies and never in the manner proposed in this dissertation. Specifically, the comparison between France and Mexico consists of using national cultural features to assess the level of overconfidence and expected stock return expectations seen in retail investors from both countries. In this case, the national cultural features used are those as described with the Indulgence versus Restrain dimension.

The Indulgence versus Restraint dimension is intrinsically related to "happiness research" (Hofstede, 2011). The study of happiness is a crucial aspect of social science research. It is one of the most investigated criteria, and for good reason. As Blanchflower and Oswald (2011) stated: "this multidisciplinary research field is, and will remain, one of genuine significance to human society. Almost everyone is interested in happiness." Happiness has been the ultimate goal and most desired condition for the human species throughout its history, and the value of other goals may only be assessed as a function of their contribution to the pursuit of happiness (Compton, 2005; Csikszentmihalyi, 2013). Happiness is a highly valued component of life quality, surpassing other values such as money, health, or sex (Skevington, Arthur and Somerset, 1997). These findings hold across cultures. In 47 countries, happiness is the highest-rated personal value, above other values such as health, love, or wealth (Kim-Prieto *et al.*, 2005).

Implications of Happiness Research

From a more practical standpoint, happiness research helps individuals make lifestyle choices for their overall well-being and guides understanding of the impact of culture, personality, and social relationships on their happiness. The research also provides insights for businesses to create supportive work environments, enhance employee satisfaction, and improve productivity. Policymakers can use this research to prioritize resources and interventions for improving community well-being and evaluating economic systems in promoting overall well-being and quality of life (Steel *et al.*, 2018). Overall, the research of this dissertation helps to address the research gap concerning the impact of national culture on the field of finance (Nadler and Breuer, 2017).

Research Aim

Understanding the psychological and cultural influences on investing is crucial for retail investors, whose increasing participation in financial markets is a force to be reckoned with. Knowledge of these influences beforehand can lead to better investment decisions and potentially improved investment outcomes. Thus, it is in retail investor's best interest to recognize and mitigate the negative effects of behavioral biases in investment practices. Furthermore, the overconfidence bias has the potential of being significantly detrimental.

Given the complexity of these influences, a specific question arises: **Do Mexican retail investors exhibit higher overconfidence and return expectations than their French counterparts when investing in the stock market under the influence of happiness sentiment?** To address this question, the research objectives are twofold:

1. Quantitative Analysis: Conduct a linear regression analysis to explore the relationship between happiness levels—framed within Hofstede's cultural dimensions—and the expected returns among retail investors from Mexico and France.
2. Experimental Approach: Execute an experiment to assess decision-making overconfidence among Mexican and French participants, manipulated through happiness sentiment in a simulated investment environment. An independent sample T-test is applied to compare overconfidence levels between the groups.

By following these research objectives, this dissertation seeks to leverage both statistical and empirical methodologies to provide a deeper understanding of how national cultural features influence investor behavior regarding overconfidence and expectation of returns.

Literature review

Foundations of Standard Finance

Key Pillars of Modern Portfolio Theory (MPT)

Statman (2008) outlines four main pillars of standard finance, also known as modern portfolio theory (MPT), which form the bedrock of traditional financial models:

1. Investors are assumed to be perfectly rational.
2. Markets are believed to be efficient.
3. Investors commonly use mean-variance portfolio theory to build their portfolios.
4. Anticipated returns are dependent solely on the level of risk.

Assumptions Underpinning Traditional Financial Models and their Impact

These four main pillars are based on the research of recognized finance scholars. (Miller and Modigliani, 1961) concluded that investors are rational and prioritize accumulating more wealth, regardless of whether it comes from cash payouts or an increase in market value. This research was preceded the introduction of the mean-variance model by Markowitz (1952). Markowitz's model consists of a mathematical framework for constructing efficient investment portfolios, which has significantly impacted modern portfolio theory (Marling and Emanuelsson, 2012) Building on this work, Sharpe (1964) Lintner (1965) and Mossin (1966) created the Capital Asset Pricing Model (CAPM) to determine an investment's expected return and sensitivity to market risk. The CAPM assumes that investors are rational and risk-averse, requiring a risk premium for holding assets sensitive to market risk. The CAPM also predicts efficient markets and Black (1972) recognized that a rational market requires the CAPM. Additionally, the CAPM has been a pivotal contributor to the development of modern portfolio theory (Dempsey, 2013).

The above-mentioned research sets the stage for the Efficient Market Hypothesis (Fama, 1970). The Efficient Market Hypothesis posits that financial markets are efficient, meaning that prices for securities fully reflect all publicly available information. Therefore, it is impossible for investors to consistently outperform the market by using any available information since it is

already incorporated into the prices of the securities. The Efficient Market Hypothesis is closely associated with the Random Walk model, a term used in financial literature to describe a price series where all subsequent price changes are random departures from previous prices (Malkiel, 1989). Therefore, it is suggested that stock prices are unpredictable, and it is impossible to use past prices for future predictions.

Modern Portfolio Theory, the Capital Asset Pricing Model, and the Efficient Market Hypothesis are considered key concepts in both academic and professional finance curricula (Otuteye and Siddiquee, 2017). For instance, the CAPM is widely used in finance to evaluate the cost of capital for companies, appraise investment portfolio performance, and price securities (Dempsey, 2013). Models that expand on the CAPM, like the three-factor model of Fama and French (1993, 1996), and the Carhart model (Carhart, 1997), which includes momentum exposure as a fourth factor, have become a reference model in asset pricing literature (Gumanti *et al.*, 2017)

Behavioral Finance Insights

Introduction to Behavioral Finance & Heuristics and Behavioral Biases in Financial Decisions

A different approach to finance, known as behavioral finance, presents a distinct basis for each of the standard finance's foundational building blocks (Statman, 2014):

1. People are "boundedly rational."
2. Markets, although challenging to outperform, are not fully efficient.
3. People develop portfolios by following the guidelines of behavioral portfolio theory.
4. The expected returns of investments are determined by behavioral asset pricing theory, which accounts for more than just differences in risk.

While the traditional finance models provide a robust framework, behavioral finance offers a compelling critique by emphasizing the limits of rationality in investor behavior. Simon (1955) introduced the concept of bounded rationality, which states that real individuals are not always rational and their ability to process information and make decisions is limited by cognitive, informational, and time constraints. This definition encapsulates better the real-world behavior

of individuals than the rational investor's definition does. Rational investors are deemed to possess an extensive knowledge of their environments, a stable system of preferences and being able to precisely calculate which course of action will lead to the maximization of their utility (Von Neumann and Morgenstern, 1944; Simon, 1955) In addition, rational investors are also immune to cognitive errors and misleading emotions. In reality, individuals often make decisions based on heuristics, which are problem solving techniques that, although suboptimal, provide answers relatively quickly and employ little resources. Decision-making based on heuristics can lead to systematic errors between the correct answer to a problem and the result of using a heuristic. These systematic errors are known as biases (Tversky and Kahneman, 1974)

Real-World Implications of Behavioral Finance

Human errors based on the use of heuristics or mental shortcuts to simplify decision making and judgment can lead to market inefficiencies (Simon, 1955). Moreover, the preferences of investors toward certain stocks are influenced by their desires, cognitive biases, and emotional states (Shefrin and Statman, 1984). A well-documented, real-world example of how heuristics affect stock markets, in this case the representativeness heuristic, was observed in the period known as the Internet bubble, which spanned from 1998 to 1999. In this period, the suffix ".com" in a company's name significantly impacted the pricing of its shares. As a result, traders tended to assign higher values to companies with this suffix, regardless of the degree to which the company was involved in internet-related activities (Cooper, Dimitrov and Rau, 2001) However, following the collapse of the internet bubble, an inverse effect was observed, whereby companies that removed the ".com" suffix from their name experienced a rise in share prices several weeks after the modification (Cooper *et al.*, 2005).

This shift towards acknowledging irrational behaviors leads us to reconsider the foundational assumptions of standard finance through the lens of behavioral theories. Behavioral finance lies at the intersection between behavioral and cognitive psychology and financial decision making (Otuteye and Siddiquee, 2017), aiming to provide a more comprehensive and realistic framework for understanding financial markets and investment behavior by explaining why and how people might deviate from the rational decision-making processes that standard finance expects (Statman, 2014). This contribution is necessary as the traditional finance framework, albeit simple and consequently attractive, does not account for fundamental facts about the

aggregate stock market, cross-section of average returns and individual trading behaviour (Barberis and Thaler, 2003).

The Role of Culture

Although culture has many different definitions, it generally refers to shared and relatively stable values (Taras, Rowney and Steel, 2009). These characteristics are passed on to individuals throughout their lives and change relatively slowly (Becker, 1998).

Hofstede's Cultural Dimensions Theory

Geert Hofstede, a Dutch social psychologist, conducted an extensive analysis of a survey database comprising data from over 50 countries in 1970 (Hofstede, 1980). This data was collected from employees working in local subsidiaries of IBM, allowing for examining cultural values and sentiments at a country level. The analysis revealed crucial cultural differences that would not have been apparent through individual-level analysis alone. According to Hofstede (2001), culture shapes individuals' cognitive schemes, programming behavioral patterns consistent with their cultural context. To further explore these differences, Hofstede performed a factor analysis at the country level, identifying four dimensions of national cultures: power distance, uncertainty avoidance, individualism, and masculinity. A fifth dimension—long-term orientation—was added based on survey data provided by Bond and colleagues (Hofstede, 2001). In 2010, an additional dimension called "Indulgence versus Restraint" was introduced, stemming from Minkov (2007) analysis of data from the World Values Survey. These six dimensions provide distinct insights into cultural variations and can be combined in various ways to understand the complexity of cultural differences across countries.

The main alternative cross cultural theories consist of the seven fundamental dimensions of natural culture as defined by Trompenaars (1993), the seven culture-level dimensions identified by Schwartz (1994) and the nine dimensions found by the Global Leadership and Organizational Behavior Effectiveness (GLOBE) study of 62 societies (House *et al.*, 2004).

This dissertation employs Hofstede's cultural dimensions theory as the framework for evaluating culture. This decision is supported by several arguments that highlight the strengths and validations of Hofstede's model compared to other cross-cultural theories. Here's an organized and cohesive arrangement of these arguments:

1. Widespread Validation and Use: Hofstede's cultural dimensions theory is extensively validated, with over 150 international studies affirming its applicability to defining the culture of a group of countries (Cuéllar, 2015). The model is considered the most precise and widely used framework for the analysis of national cultures within specialized literature (Hsu, Woodside and Marshall, 2013).
2. Historical Stability and Empirical Testing: It has been demonstrated that countries' scores on Hofstede's dimensions are stable over time (Beugelsdijk, Maseland and van Hoorn, 2015) and each dimension has been empirically tested and confirmed through correlations with other conceptually aligned data sources (Hofstede, 2011).
3. Extensive and Diverse Data Samples: The theory includes data from a larger sample of countries than other datasets (Zainuddin *et al.*, 2018) and undergoes frequent updates to expand this sample further (Cuéllar, 2015). For instance, in 2023, there were score changes for the IDV and LTO dimensions, and the number of countries considered has increased to 102 (Minkov and Kaasa, 2021, 2022).
4. Direct Link to Individual Preferences: Of all cross-cultural theories, Hofstede's is the most straightforward in linking cultural dimensions to individual preferences, which is often lacking in other theories (Breuer, Ghufran and Salzmann, 2018).
5. Significant Replications and Correlations: The dimensions and country scores have undergone six major replications involving diverse populations like employees, managers, and consumers between 1990 and 2002, in addition to 400 significant correlations with other external studies in 2001 (Hofstede, 2011).
6. Prominence in Academic Citations: Hofstede’s book "Culture's Consequences," which introduced the original four dimensions, is among the 25 most cited books in the social sciences, with over 42,000 citations in 2016 (Green, 2016).
7. Broad Application Across Fields: Hofstede’s six-dimensional framework is the most preeminent, exhaustive, and widely employed model to investigate the role of culture in various fields of study, including but not limited to marketing, management, psychology, organizational development, accounting, business ethics, and information decision science (Sivakumar and Nakata, 2001; Heydari *et al.*, 2021)

Indulgence versus Restraint Dimension

This dissertation focuses on a the most recently introduced dimension, known as Indulgence versus Restraint. This dimension is underexplored, both in absolute terms and in relation to the

other five dimensions, mainly because it was the latest one introduced to Hofstede's cultural dimensions theory (Chudnovskaya and O'Hara, 2022). The indulgence versus restraint dimension refers to a cultural characteristic that indicates how individuals tend to satisfy their basic needs and desires. Societies with high indulgence scores are generally more open and inclined to enjoy life, while those with high restraint scores tend to suppress their impulses and adhere to strict social norms and rules. Moreover, this dimension reflects the acceptable level of control over gratification of desires and impulses within a given culture. Cultures with high indulgence scores place less emphasis on traditional values, display greater tolerance for unconventional behavior, and prioritize individual happiness and enjoyment. On the other hand, cultures with high restraint scores prioritize traditional values, self-discipline, and conformity to social norms. (Hofstede, 2011; Minkov and Hofstede, 2011; Cuéllar, 2015).

According to (Hofstede, 2011), one of the main differences between indulgent and restrained societies is that the former exhibits a higher percentage of people declaring themselves very happy and more likely to remember positive emotions. In this dimension, Hofstede assigns an indulgence score of 97 to Mexico, the highest among all countries examined, and a score of 48 to France (*Country comparison tool*, 2023). information implies that Mexican society is inclined to prioritize and foster happiness and pleasure, whereas French society might focus more on discipline and conformity.

Application of Hofstede's Cultural Dimensions Theory in Business Research

Previous business-related studies have utilized Hofstede's cultural dimensions across various countries. Lanier and Kirchner (2013) analyzed Hofstede's Cultural Dimensions its impact on the national consumption of The Coca-Cola Company's beverages in 35 countries across Latin America, Asia, Europe, and North America. They found that including this dimension in their model improved its predictive capacity to 63% of the observed variability, compared to 46% in a model that only included the other five dimensions. By structuring qualitative data obtained from interviews with Danish expatriate managers working in Russia according to the Indulgence versus Restraint dimension, Chudnovskaya and O'Hara (2022) were able to identify patterns and themes related to cultural differences. Moreover, the findings in a study comparing Colombia and Vietnam's Born Global based on the Indulgence versus Restraint Dimension. confirmed the expected behaviors in each country. Lower indulgence in Vietnam resulted in a weaker moderation effect of ambidextrous leadership on export performance. In contrast,

higher indulgence in Colombia had a more significant moderation effect on the relationship between ambidextrous leadership and export performance (Escandon-Barbosa and Salas-Paramo, 2022). Sun *et al.* (2019) found that firms operating in cultures with a high score on the Indulgence versus Restraint Dimension are likely to succeed in converting Corporate Social Performance activities into positive financial performance outcomes over time.

Expanding the Scope of Financial Theories

Bridging Hofstede's Cultural Dimensions Theory with Financial Decision-Making

While Hofstede's dimensions are widely validated, their application in finance remains underexplored. Hofstede himself declares that "the finance function has been the last stronghold in business administration to escape cross-cultural analysis" (Hofstede, 2001, p. 385). Nevertheless, Marfo-Yiadom and Tweneboah (2022) have explored the relationship between credit growth for innovation, bank stability, and Hofstede's six national cultural dimensions. In another study by Lu, Niu and Zhou (2021), the impact of individualism on financial inclusion was empirically investigated using data from Hofstede's cultural dimensions database.

To the best of my knowledge, there is only one study directly analyzing cultural differences between France and Mexico researched how cultural differences significantly impact the collaboration and efficiency of French companies with their Mexican subsidiaries in automotive manufacturing (Acosta *et al.*, 2004). This study also heavily relies on Hofstede's cultural dimensions theory. Other related studies reveal that Mexicans showed a greater affinity for luxury and were more likely to use credit irresponsibly compared to their Chinese counterparts in the context of implementing the Grameen microfinance method in each country (Cervantes, Daniel and Montalvo, 2015). French households with higher levels of reported happiness tend to invest a higher proportion of their portfolio in risky assets, which as in line with the results found in four other European countries that were examined (Apergis, Hayat and Saeed, 2019).

Cultural Finance

There is an increasing, yet still very limited, focus on directly studying the role of cultural dimensions on financial decision making (Aggarwal and Goodell, 2016). Nadler and Breuer (2017) explored the concept of "Cultural Finance" as a field of study. Cultural Finance aims to incorporate cultural factors into the analysis of financial issues, providing a comprehensive

understanding of financial systems and their relationship with society. Cultural Finance is still in its early stages, even being considered a research niche (Nadler and Breuer, 2017). This interdisciplinary approach has paved the way for further studies in the field, such as Anyangwe, Vanroose and Fanta (2022) evaluation of the impact of culture on formal account ownership, savings, and credit from formal financial institutions and Nourallah (2023) investigation of how cultural differences influence the initial trust of young retail investors in financial robo-advisors in Malaysia and Sweden. Moreover, different levels in takeover performance can be explained at a statistically significant level by national culture (Breuer, Ghufran and Salzmann, 2018). All these studies employed Hofstede's cultural dimensions to measure cultural differences in their analysis. Focused on cultural happiness research, Steel *et al.* (2018) confirm that culture plays a crucial role in shaping individual and national well-being. They find that cultural values promoting social relationships and capital are strongly linked to individual subjective well-being, and countries with low power distance and uncertainty avoidance but low masculinity and individualism tend to be happier.

Investor Sentiment

Investor sentiment is a significant area of research within the realm of behavioral finance. Baker and Wurgler (2007) define investor sentiment as "a belief about future cash flows and investment risks that is not justified by the facts at hand." Chau, Deesomsak and Koutmos (2016) have provided evidence that emotional factors have a significant impact on investors' buying and selling behavior, which in turn affects stock price fluctuations. In line with these findings, Dempsey (2013) explains that market sentiment and crowd psychology play a complex role, occasionally leading to tipping points that drive the market into booms and busts.

Investor Happiness Sentiment and Investing

Research has also been conducted on investor happiness sentiment and its implications for investing. Izard, (1977) suggests that the emotional experience commonly referred to as "happiness" shares similarities with the feeling of "joy." Joy, according to Izard, encompasses a sense of self-assurance, significance, affection, trust, and acknowledgment of one's surroundings.

Huang and Goo (2008) conducted a study to examine whether investors' happy sentiment leads to an overconfidence effect. Overconfidence, defined by Odean (1998) refers to "a belief that a

trader's information is more precise than it actually is." In their study, Huang and Goo used natural environment happiness (sunshine and temperature) and investment atmosphere happiness (previous returns and margin loan change rate) as proxies for happiness, and turnover rate as a proxy for overconfidence. The results indicated a negative relationship between happiness in a natural environment and overconfident behavior, while happiness in an investment atmosphere was positively related to overconfidence. In a similar fashion, Guven (2009) matches self-reported happiness to transitory sunshine changes in the study participants' location and find that happy people are more likely to be risk averse.

Kaplanski et al (2015) investigated whether individuals with a better general feeling have higher expected returns. Their large-scale surveys of individuals holding stocks in their investment portfolios in the Netherlands showed that investors' happiness positively influenced their return expectations. Moreover, Kiymaz, Öztürkkal and Akkemik (2016) found that investors with higher expected returns tend to invest more in equities, indicating overconfidence. These findings align with Shefrin, (2000), which suggests that overconfident investors engage in excessive trading activities, resulting in high trading volume. In 13 major countries, including France, using the Twitter-based happiness index as a proxy for happiness acts as a useful predictor of future stock market volatility of the examined countries (Naeem *et al.*, 2020). Volatility helps connect investor sentiment and stock returns since shifts in investor sentiment have a positive correlation with excess returns, and the magnitude of the shifts has a significant asymmetric impact on the formation of conditional volatility of returns and a symmetric impact on expected returns (Lee, Jiang and Indro, 2002).

Bower (1992) further supports the relationship between a positive emotional state, overconfidence, and higher return expectations. Bower's findings indicate that investors are more likely to make optimistic decisions when in a positive mood. In a state of happiness, investors exhibit greater risk tolerance and anticipate higher returns. These findings are in line with Apergis, Hayat and Saeed (2019) who found happiness exerts a positive effect on investors' inclination towards taking greater risks in their financial portfolios across France, Germany, Italy, the Netherlands, and the UK between 2009 and 2014. Therefore, this positive sentiment can spill over into the stock markets, resulting in increased buying activity, and thus, higher stock prices.

Method

Linear Regressions

A series of linear regressions were conducted for the first part of the data analysis using SPSS Statistics. The purpose of conducting linear regressions was to determine whether a statistically significant correlation exists between stock market performances in Mexico and France and each country's level of public interest in their most national holiday during the month in which the holiday takes place. Mexico observes its national holiday on September 16th, Independence Day, while France celebrates Bastille Day on July 14th. In both countries, these national holidays are usually associated with jubilation, pride, and an overall feeling of happiness in the population. If the regression shows a significant positive relationship between these variables for Mexico and a weaker or negative relationship for France, it indicates higher expectations for stock returns in Mexico around their national holiday compared to France. Per those mentioned earlier in the literature review, this discrepancy is in line with the meaning of each country's scores in Hofstede's Indulgence versus Restraint dimension.

The external environment plays a pivotal role in shaping financial decision-making. For instance, research has consistently shown that factors such as seasonal changes in daylight can significantly influence economic behaviors. Kamstra, Kramer and Levi (2003) found that stock returns exhibit a seasonal pattern, with lower returns occurring during the fall and winter months when daylight diminishes. Building upon this theme, Sekizawa and Konishi (2021) conducted research based on survey data collected by the Japanese Government from 2004 to 2018. Their findings unveiled a distinct seasonal cycle in Japan's consumer confidence index (CCI) and Japanese asset value expectations (AVE), demonstrating an upward trajectory with increasing sun's elevation increasing with the approach of summer. Additionally, their research established a positive correlation between daylight duration and CCI and AVE. Their findings reveal a clear seasonal trend in these indicators.

There is existing literature directly focusing the impact of sentiment caused by emotionally charged events, as are national holidays, on financial decision-making. Edmans, Garcia and Norli (2006) explored the impact of international sporting events on financial markets. Their analysis revealed an asymmetric effect, with these events significantly affecting the stock markets of the losing countries while having a relatively insignificant positive impact on the

winning countries' markets. Expanding on this theme, Kaplanski and Levy (2010) examine the relationship between FIFA World Cup victories and stock prices. Their study uncovered a robust and noteworthy association between sporting events and stock market performance.

The holiday effect refers to abnormal stock returns on the trading day before and after a public holiday (Fields, 1934; Lakonishok and Smidt, 1988). Dumitriu and Stefanescu (2020) revealed that longer periods besides the days immediately before and after the holiday are also affected by the Holiday Effect. The holiday effect occurs continently and independently in various countries irrespective of differences in holidays and institutional frameworks (Kim and Park, 1994). For instance, Bergsma and Jiang (2016) found that the average stock returns are generally higher during the month of a cultural New Year compared to other months. Additionally, Autore and Jiang (2019) attribute investors' optimistic pre-holiday mood to more positive reactions to corporate announcements made before or during the holiday season. Teng and Liu (2013) also confirms that positive emotions associated with holidays can influence investor behavior.

Google Trends' interest-over-time metric was used as a proxy to gauge investors' happiness sentiment. The Google Trends' interest-over-time metric assigns a value between 0 and 100, representing search interest relative to its highest point in a specified location and time. The Google Trends' interest-over-time metric was measured for the "Mexican Independence Day" and "Bastille Day" search topics for Google Trends. A search topic is a group of terms that share the same concept in any language.

Google trends has previously been utilized as a proxy to measure investor sentiment in stock markets (Da, Engelberg and Gao, 2015; Lyócsa and Molnár, 2020). Naeem et al. (2020) point out that "the development of the internet and social media offers the opportunity to use people's proactive searching and posting information to formulate new proxies of investor sentiment", and showcase how the Wall Street Journal, Yahoo Finance, Facebook, Google Insights and Twitter have been as proxies for investor sentiment at the market level.

Yahoo Finance was used to retrieve the financial data for both Mexico and France. The collected financial data consisted of the closing value of each country's most important national stock exchange index, IPC for Mexico, and CAC 40 for France, covering all the trading days

in September for Mexico and July in France from 2011 to 2023. In total, there were 275 trading days considered for the CAC 40 and 258 for the IPC.

The daily returns will be computed using the following formula, where $CV_{i,t}$ is the closing value of index i on trading day t:

$$DR_{i,t} = \frac{CV_{i,t} - C_{i,t-1}}{C_{i,t-1}} \times 100\ [\%]$$

The first regression analysis examined the relationship between the daily returns of the CAC 40 and the happiness sentiment regarding the Bastille Day in France:

$$DR_{CAC40,t} = \beta_0 + \beta_1 FR_t + \epsilon_t$$

The independent variable $\beta_1 FR_t$ is the interest-over-time metric from Google Trends for the search topic "Bastille Day" on trading day t. A search topic is a group of terms that share the same concept in any language. ϵ_t is the error term.

The second regression analysis examined the relationship between the daily returns of the IPC index and the happiness sentiment regarding the Mexican Independence Day in Mexico:

$$DR_{IPC,t} = \beta_0 + \beta_1 MX_t + \epsilon_t$$

The independent variable $\beta_1 MX_t$ is the interest-over-time metric from Google Trends for the search topic "Mexican Independence Day" on trading day t.

The last two regression analyses performed utilized the closing value of each of the previously used indexes as the dependent variable instead of the daily returns. The functions looked as follows:

$$CV_{CAC40,t} = \beta_0 + \beta_1 FR_t + \epsilon_t$$

$$CV_{IPC,t} = \beta_0 + \beta_1 MX_t + \epsilon_t$$

Cook's Distance was also utilized as a means of spotting outliers that were disproportionately influencing the parameter estimates of the regression models. These data points were removed to eliminate the skewedness in the analyses caused by them. The formula for Cook's Distance is as follows:

$$D_i = \frac{e_i^2}{s^2 \cdot p} \cdot \frac{h_{ii}}{(1 - h_{ii})^2}$$

Where:

- D_i is Cook's distance for the i-th observation,
- e_i is the residual for the i-th observation (the difference between the observed and predicted values),
- s^2 is the mean squared error of the model,
- p is the number of parameters in the model (including the intercept),
- h_{ii} is the leverage of the i-th observation, which measures the observation's influence on its own predicted value. It is a value obtained from the hat matrix (a matrix that maps the vector of observed dependent variables to the vector of fitted values).

Once Cook's distances were obtained for all observations of the fours regressions models, the following formula was applied using the mean and standard deviation values associated with all the Cook's distances obtained for a certain regression model:

$$\bar{x}(Cook\ Distance) + 2\sigma(Cook\ Distance)$$

If any Cook Distance exceeded the value obtained from the formula, that data point was deemed an outlier and was therefore excluded from the analysis. There were 5 outliers detected in the Closing Value of CAC 40 model, 6 in the Daily Returns of CAC 40 model, 4 in the Closing Value of IPC model and 7 in the Daily Returns of IPC model

Behavioral Experiment

Data were collected via an experiment delivered through a Qualtrics questionnaire was developed to investigate the hypothesis that a higher score on Hofstede's Indulgence versus Restraint dimension within a respondent's country correlates positively with overconfidence in

financial decision-making. The questionnaire was administered in two languages: Spanish for participants from Mexico and French for those from France, to ensure linguistic familiarity and accuracy in responses. The participants comprised individuals over the age of 18 that held either French or Mexican citizenship. Participants had to consent to participate in the experiment for the experiment to start. Please refer to Appendix 1 and 2 to see the French and Spanish questionnaire, respectively.

Oxford Happiness Questionnaire (OHQ)

The 29-item Oxford Happiness Questionnaire is widely used to measure of subjective happiness (Hills and Argyle, 2002). However, OHQ is an ordinal scale, so it should not be used with parametric tests. That is why the Qualtrics questionnaire contained a modified 25-item version of the OHQ (Medvedev *et al.*, 2017). This modified version assigns a specific grade to each response, resulting in interval-level data suitable for parametric statistics. The cumulative score from these responses provides an overall personal happiness score. The higher the score, the higher the respondent's subjective happiness measure. The scores can range from 0 to 75.

Happiness Sentiment Induction

The experiment employed the Open Affective Standardized Image Set (OASIS) to induce a happy sentiment among participants (Kurdi, Lozano, & Banaji, 2017). Ten images, chosen for their high mean valence and low to moderate arousal levels, were selected to evoke consistent positive emotions among viewers. Valence refers to the degree of pleasure associated with the stimulus, which can range from highly positive (pleasurable) to highly negative (unpleasant). Arousal describes the intensity of the emotional response that the stimulus provokes, regardless of whether the emotion is positive or negative. Arousal can range from calming or soothing (low arousal) to exciting or agitating (high arousal). These images were displayed in the same order to all participants, each for 5 seconds, with the selection criteria emphasizing images associated with positive experiences and ensuring a uniform emotional impact through low standard deviation in valence and arousal scores. Participants rated their mood before and after viewing the images, providing data on the effectiveness of the sentiment induction. Appendix 3 showcases all the relevant information associated with the images utilized.

Cash-out Game

The experiment concludes with a 10-round cash-out game designed to simulate financial risk decisions and assess overconfidence, inspired by (Lee and Andrade, 2011). The game comprises 10 rounds, and prior to commencing round 1, participants will receive initial capital of $10. In each round, following the display of a specific dollar amount, participants must can choose either to "stay," thereby continuing to the next round, or to "cash out," essentially selling their stock. The variation in the dollar amount between rounds is randomly determined from a predefined set, which includes increments and decrements of ±$.5, ±$1.0, ±$1.5, ±$2.0, ±$2.5, and ±$3.0.

The cash-out game structure seeks to simulate decision-making scenarios involving financial risk and reward, offering insight into how individuals respond to changing monetary circumstances over the course of multiple rounds. The level of overconfidence demonstrated by investors can be assessed by the number of game rounds they participate in. A higher number of completed rounds signifies greater overconfidence in their decision-making. This is because, during the game, participants lack any concrete information about whether the stock price will increase or decrease. Instead, their decisions are primarily influenced by their subjective perceptions, which were manipulated earlier through the induction of positive emotions in the preceding section.

Independent Samples T-Test

An independent samples t-test was conducted to compare the number of rounds reached in the cash-out game between Mexican and French respondents. This was done to evaluate the potential differences in cash-out game performance, with nationality being the key factor of interest. The t-test is a suitable analysis method as it allows to determine at a statistically significant level if any observed differences in the number of rounds reached between the two groups, in this case, French and Mexican respondents, are likely due to the experimental factor being studied or if they could have happened by chance. This analysis was performed utilizing IBM SPSS Statistics.

The formula for the independent samples t-test, assuming equal variances, is:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{s_p\sqrt{\frac{2}{n}}}$$

Where:

- $\bar{X}_1$ and $\bar{X}_2$ are the sample means of the two groups,
- s_p is the pooled standard deviation of the two samples,
- n is the number of observations in each group (assuming equal sample sizes for simplicity),
- t is the t-statistic, which measures the difference between the two group means relative to the variation in the data.

The pooled standard deviation, s_p, is calculated as:

$$s_p = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}$$

Where s_1^2 and s_2^2 are the sample variances of the two groups, and n_1 and n_2 are the sample sizes.

The calculated t-statistic is then compared to a critical value from the t-distribution with $n_1 + n_2 - 2$ degrees of freedom. The decision to reject or fail to reject the null hypothesis (which typically posits that there is no difference between the group means). This decision hinges on the predetermined significance level $\alpha = 0.05$.

A Levene's Test for Equality of Variances was conducted to assesses whether the variance of the number of rounds reached by Mexican and French participants is equal across the two groups. This is a crucial step as the independent sample t-test assumes equals variances across all examined groups.

The formula for the test statistic F is:

$$F = \frac{(N-k)}{(k-1)} \cdot \frac{\sum_{i=1}^{k} N_i (Z_{i\cdot} - Z_{\cdot\cdot})^2}{\sum_{i=1}^{k} \sum_{j=1}^{N_i} \left(Z_{ij} - Z_{i\cdot}\right)^2}$$

Where:

- N is the total number of observations across all groups.
- k is the number of groups.
- Z_{ij} is the absolute deviation of the j-th observation in the i-th group from the median of the i-th group $\left(\left|X_{ij} - median(X_i)\right|\right)$.
- $Z_{i\cdot}$ is the mean of Z_{ij} for group i.
- $Z_{\cdot\cdot}$ is the overall mean of Z_{ij} across all groups.

A significant F-statistic ($\alpha \leq 0.05$) indicates the rejection of the null hypothesis of equal variances, suggesting that at least one group's variance significantly differs from others. To account for this possibility, a Welch's t-test was conducted. This type of t-test is an adaptation of the standard t-test that is used when equal variances cannot be assumed in an independent samples t-test.

The formula for Welch's t-test is:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

Where:

- $\bar{X}_1$ and $\bar{X}_2$ are the sample means of the two groups,
- s_1^2 and s_2^2 are the sample variances of the two groups,
- n_1 and n_2 are the sample sizes of the two groups,
- t is the calculated t-statistic.

The degrees of freedom for Welch's t-test, which are used to determine the critical value from the t-distribution, are calculated using the Welch-Satterthwaite equation:

$$\mathrm{df} = \frac{(\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2})^2}{\frac{(\frac{s_1^2}{n_1})^2}{n_1 - 1} + \frac{(\frac{s_2^2}{n_2})^2}{n_2 - 1}}$$

Results

Linear Regressions

CAC 40 Closing Value (CAC_40) and Google Trends' Interest-Over-Time Metric of Bastille Day in July (FR) Model

Table 1:Linear Regression Model Summary for CAC 40 Closing Value and Bastille Day Google Search Interest

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.031[a]	.001	-.003	1108.1668183

a. Predictors: (Constant), FR

Table 2: Linear Regression Coefficients for CAC 40 Closing Value and Bastille Day Google Search Interest

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	5023.580	71.343		70.414	<.001
	FR	2.509	4.937	.031	.508	.612

a. Dependent Variable: CAC_40

The regression model assessing the relationship between the CAC 40 closing value and interest in Bastille Day yields an R-square of 0.001, suggesting that the model explains 0.1% of the variance in the closing values of CAC 40. The adjusted R-square value is -0.003, indicating no improvement upon using the model over the mean model. The unstandardized coefficient for Bastille Day interest (FR) is 2.509 ($t = 0.508$, $p = 0.612$), indicating no significant predictive value of Google Trends data on the CAC 40 closing value. Nevertheless, the unstandarized coefficient of the intercept (constant) value is highly significant ($t = 70.414$, $p < 0.001$), meananing that the CAC 40 is expected to close around 5023.58 points at zero Google Trends interest for Bastille Day.

CAC 40 Daily Returns (RETURNS_CAC_40) and Google Trends' Interest-Over-Time Metric of Bastille Day in July (FR) Model

Table 3: Linear Regression Model Summary for CAC 40 Daily Returns and Bastille Day Google Search Interest

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.066[a]	.004	.001	1.07286%

a. Predictors: (Constant), FR

Table 4: Linear Regression Coefficients for CAC 40 Daily Returns and Bastille Day Google Search Interest

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.053	.069		.772	.441
	FR	.005	.004	.066	1.089	.277

a. Dependent Variable: RETURNS_CAC_40

In analyzing the daily returns of the CAC 40 index, the R-square improves marginally to 0.4%. However, the significance of the Google Trends predictor (p = 0.277) remained non-significant, meaning the Google Trends once again does not explain the variability CAC 40 daily returns.

IPC Closing Value (IPC) and Google Trends' Interest-Over-Time Metric of Mexican Independence Day in September (MX)

Table 5: Linear Regression Model Summary for IPC Closing Values and Mexican Independence Day Google Search Interest

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.286[a]	.082	.078	5240.9519323

a. Predictors: (Constant), MX

Table 6: Linear Regression Coefficients for IPC Closing Values and Mexican Independence Day Google Search Interest

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.

1	(Constant)	45798.149	404.880		113.115	<.001
	MX	-88.673	18.669	-.286	-4.750	<.001

a. Dependent Variable: IPC

For the IPC Closing Value model, we observe an R-square of 0.082, and the adjusted R-square is 0.078, indicating that approximately 7.8% of the variance in IPC Closing Values was accounted for by the model. The coefficient for Mexican Independence Day was significantly negative (B = -88.673, t = -4.750, p < 0.001), suggesting that higher interest in Mexican Independence Day is associated with a decrease in the IPC Closing value. Moreover, the highly significant intercept (constant) value (t = 113.115, p < 0.001) predicts the IPC closes around 45798.149 points when there is a zero interest level on Google Trends for Mexican Independence Day

IPC Daily Returns (RETURNS_IPC) and Google Trends' Interest-Over-Time Metric of Mexican Independence Day in September (MX)

Table 7: Linear Regression Model Summary for IPC Daily Returns and Mexican Independence Day Google Search Interest

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.138[a]	.019	.015	0.87328%

a. Predictors: (Constant), MX

Table 8: Linear Regression Coefficients for IPC Daily Returns and Mexican Independence Day Google Search Interest

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.100	.068		-1.485	.139
	MX	.007	.003	.138	2.195	.029

a. Dependent Variable: RETURNS_IPC

The final model assessing IPC daily returns revealed an R-sqsuare of 0.019, with an adjusted R-square of 0.015. The coefficient for the Mexican Independence Day interest was positive and statistically significant (B = 0.007, t = 2.195, p = 0.029), indicating a significant albeit very insignificant positive impact of Google Trends interest for Mexican Independence Day on the daily returns of the IPC.

Behavioral Experiment

Demographic Information

Out of 153 total participants, 148 consented to participate in the experiment. The sample included 121 Mexican participants (N=121) and 27 French participants (N=27). Please refer to Appendix 4 for a full demographic data.

Age Distribution:

- The mean age of French participants was 34.3 years, with ages ranging from 18 to 63 years. In contrast, Mexican participants had a mean age of 50.8 years, with a broader range from 20 to 72 years.
- The age distribution for French participants showed moderate concentrations in younger (20-25 years) and older (60-65 years) age brackets. Mexican participants predominantly clustered in the 45–70 year age bracket, indicating a more mature demographic (See Figure 1)

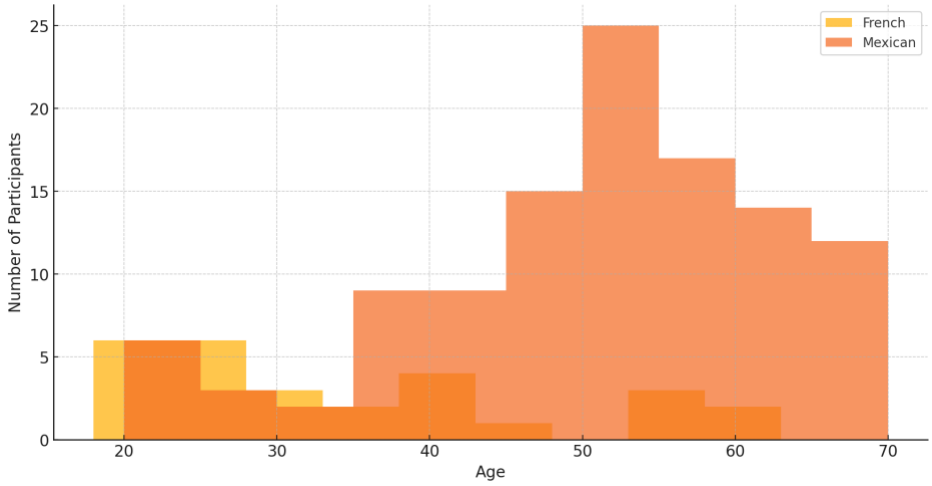

Figure 1: Experiment Participant's Age Distribution by Nationality

Gender Distribution:

- The French cohort comprised 55% males and 45% females, whereas the Mexican cohort consisted of 68% males and 32% females, suggesting a higher proportion of male participants in both cohorts but more pronounced in the Mexican sample.

Educational Attainment:

- Educational levels were higher among Mexican participants, with 59 holding a Master's degree and 2 holding a Doctorate, compared to 9 Master's and 1 Doctorate among French participants.

Employment Status:

- Employment was the most common status among both nationalities, though the Mexican cohort had higher proportions of individuals categorized as "Other" and "Retired."

Investment Behavior:

- French participants displayed a higher propensity for investing in stocks, whereas Mexican participants showed a preference for mutual funds and savings products. Duration in financial markets was notably longer among Mexicans, with a significant proportion reporting over 10 years of investment experience.

OHQ Score

The average OHQ score for Mexican participants is 57.02, and for French participants is 48.37. These results are in line with Hofstede (2011), who mentions that more indulgent societies, as is Mexico, are more likely to have a "higher percentage of people declaring themselves very happy."

Happiness Sentiment Elicitation through Visual Stimuli (OASIS Pictures)

As Table 9 shows, the overall pre-viewing average mood rating is approximately 5.68 on a 7-point scale, indicating a slightly positive mood. Post-viewing, the average mood rating increases to approximately 5.98. The mean increase in mood ratings was +0.30, suggesting a small but positive shift in mood after image exposure. However, Mexican participants had a consistently higher pre-viewing and post-average mood than their French counterparts (+0.91

and +0.69, respectively). Nevertheless, the change from pre-viewing mood to post-viewing mood was higher for French participants, +0.41, than for Mexican participants, +0.19.

Table 9: Mood Rating Pre and Post Image Viewing

	Average Mood Rating		
Condition	**Mexican**	**French**	**Overall**
Pre-viewing	6.13	5.22	5.68
Post-viewing	6.32	5.63	5.98
Change	+0.19	+0.41	+0.30

Table 10 shows a summary of the self-assessed emotional state after watching the pictures

Table 10: Distribution of Self-Assessed Emotional Changes

Response	**Mexican**	**French**	**Combined**
Much unhappier	0.82%	0.00%	0.49%
Somewhat unhappier	2.46%	1.72%	1.97%
Same as before	45.90%	62.07%	45.10%
Somewhat happier	45.08%	32.76%	36.29%
Much happier	14.75%	1.72%	9.33%

These findings indicate a slight improvement in mood perception on average after image viewing. A significant portion of the participants experienced a positive mood shift, suggesting the images had a generally favorable effect on mood.

Independent Samples T Test

Table 11 shows that Mexican participants achieved a mean of 7.58 rounds (SD = 3.365). French participants reached a mean of 5.67 rounds (SD = 3.282). Levene's test for equality of variances indicates no significant difference in variance between the two groups (F = .184, p = .540). Given this result of Levene's test, supporting the assumption of equal variances.

Table 11: Group Statistics of Cash-Out Game Results

Group Statistics

	Nationality	N	Mean	Std. Deviation	Std. Error Mean
Number of rounds reached in the game	Mexican	121	7.58	3.326	.302
	French	27	5.67	3.282	.632

Table 12: Independent Samples Test Output

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Number of rounds reached in the game	Equal variances assumed	.184	.668	2.707	146	.004	.008	1.912	.706	.516	3.308
	Equal variances not assumed			2.730	38.843	.005	.009	1.912	.700	.495	3.328

Under this assumption, the t-test showed that nationality had a significant effect on numbers of rounds reached in the cash-out game ($t(146) = 2.707$, $p = 0.008$, two-tailed). The "Mexican" group reached 1.912 more rounds than the "French" group, with a standard error of the difference at 0.706. The 95% confidence interval for the mean difference ranged from 0.516 to 3.308, excluding zero, which indicates a significant positive difference (See Table 12). Based on these findings, we accept the hypothesis that the participants' nationality positively influenced the number of rounds a participant reached in the cash-out game.

Discussion

Linear Regression Models

The models using the IPC Index show that the Google Trends' Interest-Over-Time Metric on Mexican Independence Day had a significant, though small, effect on the IPC Index's closing value and daily returns. On the other hand, the models examining the relationship between Google Trends' Interest-Over-Time Metric on Bastille Day and the CAC 40 closing value and daily returns demonstrate meager predictive capabilities. These outcomes indicate that public interest as measure by Google Trends for Mexican Independence Day in Mexico has a negligible, yet statistically significant. On the contrary, Google Trends data for Bastille Day in France is not a good predictor.

Nevertheless, the evidence obtained does not support the theory that higher interest in Mexican Independence Day leads to higher expected returns in the IPC. The regression outputs show mixed effects. While there is a slight positive impact on daily returns, there is a significant negative impact on the closing values during periods of high interest on Mexican Independence Day. These findings suggest that there might be a short-term positive movement, as reflected in daily returns. However, the overall valuation at market close could be negatively affected by other market dynamics not captured by the model.

The coefficients found in the regression models concerning the IPC align with research made on the Holiday Effect on the Mexican stock market. Samaniego, Salgado and Pérez, (2022) found no evidence that the Holiday Effect was present in the returns of the IPC. The negative coefficient for the closing value might suggest that higher interest in Mexican Independence Day might be associated with a lower closing value of the IPC. Kudryavtsev, (2019) suggests that before holidays investors might hold back on trading, which could cause a less dynamic market. This underreaction can result in a lower closing value of stock indices such as the IPC during times of high interest in a holiday like Mexican Independence Day. This pattern aligns with the observed effect, where the anticipation of the Mexican Independence Day seems to cause a decrease in stock prices.

Behavioral Experiment

The main insights from the behavioral experiment came from the results of the cash-out game. According to Barber and Odean (2001), overconfidence in investors can lead to excessive trading and risk-taking. This theory is supported by our observation that Mexican participants, who exhibited signs of overconfidence by engaging in more rounds of the cash-out game, appeared to assume greater risks. Additionally, the use of the OASIS pictures to induce a happiness sentiment showed to be successful overall, indicating that respondents engaged with the cash-out game in a happy state of mind. Notably, Mexican participants reported higher levels of happiness, aligning with Hofstede, (2011) Indulgence versus Restraint cultural dimension. This indicates that the induced happiness could have influenced the greater number of rounds completed by Mexican participants, suggesting a potential link between positive emotional states and risk-taking behaviors in financial decision-making.

Other notable findings include that higher educational levels were noted among Mexican participants, which might correlate with a higher confidence in making investment decisions. The role of education in shaping investment decisions is well-documented (Rooij, Lusardi and Alessie, 2007), where higher education levels are associated with better investment choices. These findings might explain why Mexican participants, with higher educational attainment, preferred more conservative investment products such as mutual funds and saving products.

Mexican participants were older on average compared to the French participants. This could imply a more seasoned approach to investing among the Mexican sample, potentially influencing their confidence levels in investment decisions. Nevertheless, these findings go against literature suggesting that older investors tend to be risk averse (Yao, Hanna and Lindamood, 2004).

Applications

Retail Investors: Debiasing Strategies and Implications

This dissertation primarily focuses on retail investors, providing targeted recommendations based on the findings that reveal that Mexican retail investors, influenced by happiness sentiment, are prone to overconfident financial decision-making, often failing to realize it.

However, by adopting debiasing techniques that specifically address overconfidence, these investors can significantly mitigate such biases and their adverse consequences. While this dissertation's results are centered on Mexican investors, its implications extend globally; retail investors from other countries might similarly benefit from recognizing their susceptibility to overconfidence under similar emotional influences. They can employ their country's Hofstede's Indulgence versus Restraint score as a self-assessment benchmark, empowering them to make more informed financial decisions.

Professional Market Forecasters: Comparative Insights and Applications

The relevance of these findings is not confined to retail investors. It's important to note that professional market forecasters, just like retail investors, have also demonstrated significant overconfidence, a tendency that is often more pronounced than in retail investors. This understanding can help professional forecasters feel less singled out and more part of a common human tendency, making the debiasing recommendations equally relevant and applicable to them.

Organizational Utilization: Tailored Financial Planning and Product Design

Organizations can leverage these insights in various ways. Financial advisors, for instance, might customize financial plans and investment advice to align with the distinct behavioral tendencies of different cultural groups. For Mexican investors, who may exhibit heightened overconfidence and return expectations, strategies focusing on risk management and realistic goal setting could be particularly effective. Furthermore, investment products designed to cater to the behavioral profiles of specific cultural groups may prove beneficial. For example, products offering structured and guided investment choices could better suit overconfident investors.

Educational Initiatives and Investment Platforms

Investment firms and financial educators could develop workshops, webinars, and other resources aimed at addressing common biases and helping investors make informed decisions, thereby avoiding typical pitfalls such as overestimating returns or underestimating risks. Additionally, investment platforms, which experiencing a surge in retail investor sign-ups, could incorporate tools that enable users to more accurately assess their risk tolerance, taking into account cultural biases in risk perception and return expectations. These platforms might also implement features such as periodic reminders for investors to review their portfolios and

investment assumptions or personalized dashboard features that highlight an investor's historical biases and reinforce key investment principles. For instance, if an investor consistently overestimates returns, the platform could provide regular market reality checks.

Strengths & Limitations

Linear Regressions

Strengths

The linear regression models employed in this dissertation exhibit three principal strengths. Firstly, using linear regression to statistically analyze the impact of public sentiment during national holidays on stock indices provides a robust method for precisely quantifying relationships. This approach ensures a detailed examination of how public mood fluctuations correlate with market movements. Secondly, implementing Cook's Distance to control for outliers is critical as it prevents extreme values from overly influencing the models, thereby maintaining the integrity of the analysis. Thirdly, utilizing Google Trends as a proxy for public interest is innovative. This method captures real-time, organic interest levels, offering an alternative to traditional survey methods, which often cannot reflect immediate changes in public sentiment.

Limitations

However, the linear regression analyses are not without limitations. The most significant concern is the low R-squared values observed in the models. These values indicate that numerous factors influencing the CAC 40 and IPC indices remain unaccounted for in the current model configurations. Furthermore, the Google Trends data did not significantly predict stock market performance in most models. This issue primarily stems from the reliance on Google Trends' Interest-Over-Time Metric as the sole predictor in the linear regression models, which oversimplifies the complex array of factors impacting market dynamics. Including additional variables, such as economic indicators, political events, or global market trends, might enhance the model's explanatory power. Moreover, explicitly controlling for these variables could better isolate the specific impact of public interest, as measured by Google Trends data, on the dependent variable of the analysis. The assumption that Google Trends alone can serve as a comprehensive predictor might need revisiting to accommodate the multifaceted nature of market dynamics.

Behavioral Experiment

Strengths

The experiment demonstrates four principal strengths. Firstly, the questionnaire was developed in Spanish and French and administered in the participants' native languages—Spanish for Mexicans and French for the French. This approach minimizes language biases and enhances the accuracy of responses. Secondly, a robust framework comprising the Oxford Happiness Questionnaire, the Open Affective Standardized Image Set (OASIS), and a cash-out game were utilized. This combination effectively manipulates and measures participants' mood and financial decisions, linking psychological states to economic decision-making. Thirdly, the employment of well-established measures such as the Oxford Happiness Questionnaire and the use of the OASIS database for emotional induction ensures the reliability and validity of the instruments in measuring the intended constructs. Lastly, applying the independent samples t-test to compare outcomes between two cultural groups offers a straightforward and statistically robust method to assess the influence of nationality on financial decision-making confidence.

Limitations

Despite these strengths, the experiment also exhibits several limitations. Primarily, the absence of data stratification presents a risk of non-representativeness in the sample, which could lead to biased results if certain population segments are underrepresented or overrepresented, thereby compromising the generalizability of the findings. Additionally, the sample size was not balanced between the two groups due to challenges in achieving sufficient participation, which might have been mitigated by offering financial incentives. However, financial constraints rendered this option unfeasible. Nevertheless, Levene's test confirms that the variances between groups are not significantly different, suggesting that the data remains robust despite these limitations. The consistency of the t-test results with established research further supports the reliability of the findings.

A further limitation concerns the environmental conditions under which the experiment was conducted. The distribution of the Qualtrics survey electronically allowed participants to complete it on their devices at their convenience, potentially allowing their external environments to influence their perceptions of happiness variably. Surveying a controlled laboratory setting would mitigate external influences, ensuring response uniformity. Moreover, the cash-out game simplifies the complex nature of real-world financial decisions. Its design

may only partially capture the nuances of economic decision-making under typical conditions. Future experiments might address this by linking participants' payouts to their end-game financial status, like approaches used in experimental economics. Finally, the selection and interpretation of images from OASIS to induce happiness may be less effective across different cultures, potentially introducing bias in the mood induction process and its subsequent influence on financial decision-making.

Conclusion

This dissertation set out to explore the research question: **Do Mexican retail investors exhibit higher overconfidence and return expectations than their French counterparts when investing in the stock market under the influence of happiness sentiment?** Through a comprehensive approach combining quantitative analysis and behavioral experimentation, the research objectives were thoroughly addressed.

The main findings of this study revealed significant cultural differences between Mexican and French retail investors' behavior. The quantitative analysis, using linear regression models, indicated that public interest as measured by Google Trends for national holidays had varying impacts on stock market performance in Mexico and France. Specifically, the interest in Mexican Independence Day had a slight positive effect on daily returns but a significant negative impact on closing values, suggesting short-term optimism but long-term caution among Mexican investors. In contrast, the interest in Bastille Day did not show significant predictive value for the CAC 40 index, highlighting different investor behaviors influenced by cultural contexts.

The behavioral experiment further revealed that Mexican participants, influenced by happiness sentiment, demonstrated greater overconfidence by engaging in more rounds of the cash-out game compared to their French counterparts. This overconfidence is aligned with the cultural dimension of Indulgence versus Restraint, where Mexico scores higher on indulgence, indicating a greater propensity for optimism and risk-taking in financial decisions.

Recommendations

For Retail Investors

- Debiasing Techniques: Employ strategies to counter overconfidence, such as reflective thinking and seeking external advice.
- Self-Assessment: Use Hofstede's Indulgence versus Restraint score to evaluate and manage susceptibility to overconfidence.
- Regular Reviews: Periodically reassess investment assumptions and market conditions to stay grounded.

For Finance Professionals

- Acknowledge Biases: Recognize overconfidence as a common tendency and adopt debiasing methods like peer reviews and scenario planning.

For Organizations

- Customized Financial Plans: Tailor financial advice to cultural behavioral tendencies, focusing on risk management and realistic goals.
- Behavior-Informed Products: Design investment products that offer structured choices to help overconfident investors.

For Educational Initiatives and Investment Platforms

- Bias-Addressing Resources: Create educational workshops and resources to guide informed decision-making.
- Debiasing Tools on Platforms: Include features for accurate risk assessment and periodic market reality checks to help investors align expectations with reality.

Research Process

The research process itself demonstrated the importance of considering cultural factors in financial behavior studies. The mixed-methods approach, combining linear regression and behavioral experimentation, provided a robust framework for understanding the complex interplay between culture, emotion, and investment behavior. However, limitations such as sample size imbalance and the need for more controlled experimental conditions were noted. These limitations suggest that future research should strive for larger, more balanced samples and controlled environments to enhance the reliability and generalizability of findings.

Future Research Directions

The findings of this dissertation open several avenues for future research that could further elucidate the interplay between cultural dimensions, emotional states, and investment behaviors. The following areas are recommended for future exploration:

Broader Cultural Comparisons

Future studies should expand beyond the binary comparison of Mexico and France to include a wider array of countries with diverse cultural scores on Hofstede's dimensions. Investigating countries with varying levels of indulgence and restraint could provide a more comprehensive understanding of how these cultural attributes influence investor behavior globally. For instance, comparing countries like Japan (low indulgence) with Brazil (high indulgence) might reveal different patterns of overconfidence and risk-taking behaviors.

Longitudinal Studies

Conducting longitudinal studies would provide insights into how overconfidence and return expectations evolve over time and under different market conditions. By tracking the same group of investors across various economic cycles and major market events, researchers can assess how enduring these behavioral biases are and how they are influenced by long-term cultural conditioning.

Impact of Different Emotional States

While this dissertation focused on happiness as an emotional state, future research should explore the impact of other emotions such as fear, anger, and sadness on investment decisions. By using similar experimental setups to induce these emotions, researchers can compare their effects on overconfidence, risk tolerance, and return expectations, providing a more nuanced understanding of emotional influences in financial behavior.

Detailed Behavioral Analysis

Further experiments could employ more sophisticated behavioral finance methodologies, such as real-time trading simulations and virtual reality environments, to observe investor behavior in a more realistic setting. These advanced techniques can help capture the complexity of decision-making processes and the subtle influences of cultural and emotional factors.

Cross-Cultural Behavioral Finance Models

Developing and testing theoretical models that integrate cultural dimensions with behavioral finance theories could provide a more holistic framework for understanding investor behavior. Such models could incorporate variables like national happiness indices, cultural values, and economic indicators to predict market behaviors and investor decision-making patterns more accurately.

Financial Education and Intervention Programs

Research could focus on designing and evaluating financial education programs tailored to different cultural contexts. By testing the effectiveness of these programs in reducing overconfidence and improving investment outcomes, researchers can identify best practices for educating investors across various cultural backgrounds. Additionally, intervention studies that actively debias investors and measure the long-term impacts on their financial decisions would be valuable.

Policy Implications and Regulatory Frameworks

Investigating the policy implications of behavioral and cultural finance research is another important direction. Future studies could analyze how regulatory frameworks can be designed or adjusted to mitigate the adverse effects of overconfidence and other biases in retail investing. Policymakers could benefit from understanding how different cultural contexts require tailored regulatory approaches to protect investors and maintain market stability.

Cultural Adaptation of Financial Products

Financial institutions could use insights from cultural finance research to design investment products that cater to the specific needs and biases of different cultural groups. Future research could explore how culturally adapted financial products, such as risk-adjusted investment portfolios or culturally tailored financial planning services, perform in the market and their acceptance among investors from various cultural backgrounds.

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Appendices

Appendix 1: French Version of Qualtrics Questionnaire

Bienvenue et merci de votre participation à notre étude. Votre contribution est très appréciée.

Veuillez trouver un endroit calme et préparez-vous pour une courte séance de 5 minutes.

Votre confort et votre concentration sont importants pour nous.

Cette étude est totalement anonyme.

Avant de commencer, nous avons besoin de votre consentement. Vous pouvez le donner en cliquant sur le bouton ci-dessous.

Merci de votre collaboration!

- Je donne mon consentement pour participer à l'étude et j'autorise l'utilisation de mes informations dans cette étude.
- Je ne donne pas mon consentement pour participer à l'étude.

Nationalité
- Mexicaine
- Française

Âge

Genre
- Masculin
- Féminin
- Autre
- Je préfère ne pas dire

Niveau d'études le plus élevé atteint

- Baccalauréat
- Licence, licence professionnelle, BUT
- Maîtrise
- Doctorat
- Autre

Statut d'emploi
- Employé
- Sans emploi
- Étudiant
- Retraité
- Autre

Depuis combien de temps participez-vous aux marchés financiers ? (Incluez tout type d'investissement dans des actions, des obligations, des fonds communs de placement, des crypto-monnaies, etc., que vous négociiez fréquemment ou déteniez des investissements à long terme.)
- Jamais
- Moins de 1 an
- 1 à 3 ans
- 3 à 5 ans
- 5 à 10 ans
- Plus de 10 ans

Dans quels produits financiers avez-vous investi ?
- Actions
- Obligations de sociétés
- Obligations d'État
- ETF
- Fonds d'investissement
- Instruments complexes (Futures, options, swaps)
- Produits d'épargne
- Crypto-monnaies
- NFT

- Autres

Vous trouverez ci-dessous une série d'affirmations sur le bonheur. Évaluez dans quelle mesure vous êtes d'accord ou pas d'accord avec chacun d'entre eux en cliquant sur le cercle correspondant.

Vous devrez lire attentivement les déclarations, car certaines sont formulées positivement et d'autres négativement. Ne vous attardez pas trop sur des questions individuelles ; Il n'y a pas de « bonnes » ou de « mauvaises » réponses et il n'y a pas de questions pièges.

La première réponse qui vous vient à l'esprit est probablement la bonne pour vous.

Si certaines questions vous semblent difficiles, veuillez donner la réponse qui est vraie pour vous en général ou la plupart du temps.

Totalement en désaccord | Plutôt en désaccord | Légèrement en désaccord | Légèrement d'accord | Plutôt d'accord | Totalement d'accord

- Je ne suis pas particulièrement optimiste quant à l'avenir
- Je me sens complètement alerte mentalement
- Je ne suis pas particulièrement satisfait de la façon dont je vis
- J'éprouve souvent de la joie et de l'extase
- Je ne pense pas que le monde soit un bon endroit
- Je trouve la beauté dans certaines choses
- La vie est belle
- J'ai généralement une bonne influence sur les événements
- Je suis très satisfait de tout dans ma vie
- J'ai l'impression que je ne contrôle pas vraiment ma vie
- Je pense que la vie est très enrichissante
- J'ai l'impression d'avoir beaucoup d'énergie
- Je peux m'intégrer (trouver du temps pour) tout ce que je veux
- Je suis très heureux
- Je suis toujours engagé et impliqué
- Je n'ai pas de souvenirs particulièrement heureux du passé

- Je n'ai pas de sens ni de but particulier à ma vie
- J'ai toujours un effet joyeux sur les autres
- Je ris beaucoup
- Je ne m'amuse pas avec les autres
- Je ne me sens pas particulièrement en bonne santé
- Je trouve la plupart des choses drôles
- J'ai des sentiments très chaleureux envers presque tout le monde
- J'ai l'impression que je peux affronter n'importe quoi
- Je ne pense pas avoir l'air attirant

Comment évalueriez-vous votre humeur actuelle ?
- Très négatif
- Un peu négatif
- Légèrement négatif
- Neutre
- Légèrement positif
- Un peu positif
- Très positif

Vous verrez 10 images, chacune pendant 5 secondes. Regardez-les attentivement.

Les images changeront automatiquement, vous n'avez pas besoin de cliquer pour avancer.

Pour commencer, veuillez appuyer sur le bouton « Page suivante ».

Après avoir vu les images, comment évaluez-vous votre humeur actuelle ?
- Très négatif
- Un peu négatif
- Légèrement négatif
- Neutre
- Légèrement positif
- Un peu positif
- Très positif

Par rapport à avant de voir les images, que pensez-vous de votre état émotionnel actuel ?
- Beaucoup moins heureux
- Un peu moins heureux
- Égal
- Un peu plus heureux
- Beaucoup plus heureux

Bienvenue dans « Bourse dynamique : le défi du marché » !

Vous commencerez avec un action de 10 $.

Au cours de 10 tours, la valeur de cet action variera de manière aléatoire à chaque tour et pourra augmenter ou diminuer d'un montant de 0,5 $, 1,0 $, 1,5 $, 2,0 $, 2,5 $ ou 3,0 $.

A la fin de chaque tour, une décision cruciale vous sera présentée : vous pouvez choisir de continuer en passant au tour suivant, en conservant votre action ; ou vous pouvez décider de vous retirer, en vendant votre action au prix actuel et en mettant ainsi fin à la simulation.

Lorsque vous êtes prêt à commencer, appuyez simplement sur « page suivante ».

Profitez de la simulation !

Le prix de votre est de 10 $

Veuillez indiquer si vous souhaitez passer au tour suivant, en conservant votre action, ou si vous préférez vous retirer en la vendant au prix actuel.

- Continuer
- Vendre

Le prix de votre action a changé de $±X

Le prix actuel de votre action est de $X

Veuillez indiquer si vous souhaitez passer au tour suivant, en conservant votre action, ou si vous préférez vous retirer en la vendant au prix actuel.

- Continuer
- Vendre

Appendix 2: Spanish Version of Qualtrics Questionnaire

Bienvenido y gracias por participar en nuestro estudio. Su aporte es muy valorado.

Por favor, encuentre un lugar tranquilo y prepárese para una breve sesión de 5 minutos.

Su comodidad y concentración son importantes para nosotros.

Este estudio es totalmente anónimo.

Antes de comenzar, necesitamos su consentimiento. Puede darlo haciendo clic en el botón a continuación.

¡Gracias por su colaboración!

- Doy mi consentimiento para participar en el estudio y autorizo que mi información se utilice en este.
- No doy mi consentimiento para participar en el estudio.

Nacionalidad
- Mexicana
- Francesa

Edad

Género
- Masculino
- Femenino
- Otro
- Prefiero no decirlo

Máximo nivel educativo alcanzado
- Bachillerato
- Licenciatura

- Maestría
- Doctorado
- Otro

Estatus laboral
- Empleado
- Desempleado
- Estudiante
- Retirado
- Otro

¿Cuánto tiempo ha estado participando en los mercados financieros? (Incluya cualquier tipo de inversión en acciones, bonos, fondos mutuos, criptomonedas, etc., tanto si realiza operaciones frecuentes como si mantiene inversiones a largo plazo.)
- Nunca
- Menos de 1 año
- 1 a 3 años
- 3 a 5 años
- 5 a 10 años
- Más de 10 años

¿En cuáles productos financieros ha invertido?
- Acciones
- Bonos corporativos
- Bonos gubernamentales
- ETFs
- Fondos de inversión
- Instrumentos complejos (Futuros, opciones, swaps)
- Productos de ahorro
- Criptomonedas
- NFTs
- Otros

A continuación, hay una serie de afirmaciones sobre la felicidad. Evalúe en qué medida está de acuerdo o en desacuerdo con cada una haciendo clic en el círculo correspondiente.

Necesitará leer cuidadosamente las afirmaciones, ya que algunas están formuladas positivamente y otras negativamente. No se demore demasiado en preguntas individuales; no hay respuestas "correctas" o "incorrectas" y no hay preguntas capciosas.

La primera respuesta que se le venga a la cabeza es probablemente la correcta para usted.

Si encuentra algunas preguntas difíciles, por favor, dé la respuesta que sea verdadera para usted en general o la mayor parte del tiempo.

Totalmente en desacuerdo | Moderadamente en desacuerdo | Ligeramente en desacuerdo | Ligeramente de acuerdo | Moderadamente de acuerdo | Totalmente de acuerdo

- No tengo recuerdos felices del pasado
- Siempre tengo un efecto alegre en los demás
- A menudo experimento alegría y éxtasis
- La vida es buena
- Siento que la vida es muy gratificante
- Siento que tengo mucha energía
- Soy muy feliz
- No me siento del todo saludable
- No creo que el mundo sea un buen lugar
- Estoy muy satisfecho con todo en mi vida
- Siento que puedo afrontar cualquier cosa
- No me divierto con otras personas
- Encuentro la mayoría de las cosas divertidas
- Me río mucho
- No tengo un sentido particular de significado y propósito en mi vida
- Siento que no tengo control sobre mi vida
- Tengo sentimientos muy cálidos hacia casi todos
- No me siento particularmente complacido con cómo soy
- Siempre estoy comprometido e involucrado

- Puedo encontrar tiempo para todo lo que quiero
- Tengo buena influencia en acontecimientos
- No soy particularmente optimista sobre el futuro
- Encuentro belleza en algunas cosas
- Me siento completamente alerta a nivel mental
- No creo que me vea atractivo/a

¿Cómo calificaría su estado de ánimo actual?
- Muy negativo
- Algo negativo
- Ligeramente negativo
- Neutral
- Ligeramente positivo
- Algo positivo
- Muy positivo

Verá 10 imágenes, cada una durante 5 segundos. Simplemente obsérvelas atentamente.

Las imágenes cambiarán automáticamente, no necesita hacer clic para avanzar.

Para comenzar, por favor presione el botón "Página siguiente".

Después de ver las imágenes, ¿cómo calificaría su estado de ánimo actual?
- Muy negativo
- Algo negativo
- Ligeramente negativo
- Neutral
- Ligeramente positivo
- Algo positivo
- Muy positivo

Comparado con antes de ver las imágenes, ¿qué piensa sobre su estado emocional actual?
- Mucho menos feliz

- Algo menos feliz
- Igual
- Algo más feliz
- Mucho más feliz

¡Bienvenido a "Bolsa Dinámica: El Desafío del Mercado"!

Comenzará con una acción de $10.

A lo largo de 10 rondas, el valor de esta acción variará aleatoriamente en cada ronda, pudiendo incrementar o disminuir por una cantidad de $0.5, $1.0, $1.5, $2.0, $2.5 o $3.0.

Al concluir cada ronda, se presentará una decisión crucial: puede optar por continuar al avanzar a la siguiente ronda, manteniendo su acción; o puede decidir retirarse, vendiendo su acción al precio actual y finalizando así el juego.

Cuando esté preparado para comenzar, simplemente presione "Página siguiente".

¡Disfrute de la simulación!

El precio de su acción es $10

Por favor, indique si desea continuar a la siguiente ronda, manteniendo su acción, o si prefiere retirarse vendiéndola al precio actual.

- Continuar
- Vender

El precio de su acción ha variado en $±X

El precio actual de su acción es $X

Por favor, indique si desea continuar a la siguiente ronda, manteniendo su acción, o si prefiere retirarse vendiéndola al precio actual.

- Continuar
- Vender

Appendix 3: Key Information of Selected Images from the OASIS Database

Theme	Category	Valence Mean	Arousal Mean
Lake 13	Scene	6.166667	3.721154
Baby 5	Person	6.138889	3.721154
Sunset 3	Scene	6.12037	3.711538
Lake 7	Scene	6.092593	3.586538
Baby 6	Person	6.046296	3.653846
Bird 3	Animal	6.037037	3.432692
Baby 2	Person	6.027778	3.663462
Mother 9	Person	5.981481	3.634615
Lake 3	Scene	5.962963	3.221154
Flowers 2	Object	5.95098	3.455446

Appendix 4: Demographic Data of Experiment Participants

	Category	French (N=27)	Mexican (N=121)
Age	Average	34.3 years	50.8 years
	Range	18 to 63 years	20 to 72 years
Gender	Male	15	78
	Female	12	43
Highest Level of Education Achieved	High School	4	3
	Bachelor's	13	50
	Master's	9	59
	Doctorate	1	2
Employment Status	Employed	14	58
	Student	9	2
	Other	2	45
	Retired	2	9
Time Participating in Financial Markets	Never	10	31
	1 to 3 years	6	18
	Less than 1 year	5	8
	3 to 5 years	3	0
	5 to 10 years	3	8
	More than 10 years	0	49
Financial Products Invested In	Stocks	14	34
	Savings Products	7	48
	Bonds	6	35
	Mutual Funds	6	70
	Cryptocurrencies	2	0

Appendix 5: AI Use Acknowledgment

In writing this dissertation I utilized AI tools, specifically ChatGPT (GPT-4), to assist in tasks, as specified in the table below.

Dissertation Stage	AI tool and version	Goal	Prompt
Literature review	Chat GPT-4	To receive feedback and constructive criticism on the literature review I had already written to improve it. The criteria was based on criteria outlined in the GBBA Dissertations Marking Grid.	You will find attached my dissertation's literature review. I already have written it and would need help on how to improve it based on the following criteria: (NOTE: Do not write anything, limit yourself to providing feedback) 1- The overall goal of the literature review is to ensure that the research question has been connected with previous research and theory. The title of my dissertation is "The Impact of Cultural Indulgence on Overconfidence and Return Expectations: A Comparative Analysis of Retail Investors in France and Mexico" 2- The literature review should represent an insightful discussion of previous research. The concepts that are discussed must be clearly defined. 3- The literature review should clearly connect the dissertation to the literature and may even provide some new insights into the topic. 4- The literature review should clearly identify where the gaps

			in knowledge concerning my research topic are relating these to my research objectives. 5- Discussion of the literature should be in a critical mode, which could be used to point to following chapters in which the weaknesses in the literature identified are addressed by your research. In other words, the literature review should be a bridge between the objectives of the research and the analysis to come. 6- A good review should demonstrate familiarity with the topic, show the path of prior research and how it is linked to the current project, integrate and summarize the literature. To do this effectively the review should be written in a critical and reflective style. One should not simply accept something because it is written; judgement should be passed on it, showing where it is good or where it is poor. Being critical does not mean simply to pick holes in an argument—praise should be given to good ideas.
Introduction, Literature review.	ChatGPT-4	To obtain insights into how to structure the transitions of the various sections in the introduction and the literature review.	Could you please provide recommendations to enhance the clarity of the following narrative by structuring the transitions between sections more smoothly?

Executive Summary, Introduction, Literature review, Method, Results, Conclusion, Discussion	ChatGPT-4	To enhance the overall quality of the writing.	Could you please help me enhance the clarity, cohesion and coherence of the following paragraph?
Introduction, Literature review, Method, Discussion	Consensus GPT, Scholar GPT and SciSpace GPT on ChatGPT-4	To facilitate identifying academic papers and articles on specific topics relevant to the dissertation. The academic papers and articles were manually verified to assess their relevance.	Could you please help me find research papers and academic articles that discuss, are related to, or reference (topic)?