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TABLE OF CONTENTS

SESSION 1: ACCOUNTING & AUDITING 1
IMPACT OF FINANCIAL PERFORMANCE ON SUSTAINABILITY REPORTING: EMPIRICAL EVIDENCE IN AQUATIC FIRMS IN VIETNAM1
Nguyen Thuy Linh, Nguyen Hoang Dung and Vu Tran Phuong Anh
Academy of Finance, Vietnam
GREENING PROFITS: ASSESSING THE FINANCIAL IMPACT OF ENVIRONMENTAL PERFORMANCE IN ASIAN ENERGY FIRMS
Ngo Thanh Xuan, Pham Thi Thu Thao and Nguyen Ha Thu
National Economics University
EVALUATING THE IMPACT OF INTERNAL CONTROLS ON RISK MANAGEMENT: THE CASE OF COOPERATIVES IN DGRV'S BUSINESS AREAS IN VIETNAM
Bui Thi Thu Thuy, Tran Thi Lan Phuong and Nguyen Thi Thuy Duong
National Economics University
CORPORATE GOVERNANCE, FIRM PERFORMANCE AND OWNERSHIP STRUCTURE OF LISTED COMPANIES IN NEW ZEALAND67
Hong Hanh Ha
National Economics University
SESSION 2: FINANCE 1
THE IMPACT OF FINANCIAL DISTRESS ON FIRM VALUE OF LISTED ENTERPRISES: EMPIRICAL EVIDENCE OF LISTED CONSTRUCTION AND MATERIALS ENTERPRISES
Thuy Duong Phan and Thi Thanh Nga Ngo
University of Transport Technology
SUSTAINABLE BANKING DISCLOSURE INDEX AND FINANCIAL PERFORMANCE IN THE BANKING SECTOR THE CASE OF VIETNAM106
Vu Thi Kim Oanh and Le Quynh Chi
Banking Academy of Vietnam, Hanoi

DIGITAL TRANSFORMATION AND PROFITABILITY: AN INVESTIGATION INTO THE BANKING SECTOR OF SOUTH ASIAN COUNTRIES121
Bhaskar Podder, Jaideep Ghosh and Sundar Venkatesh
School of Management and Entrepreneurship, Shiv Nadar University
FACTORS AFFECTING EARNINGS MANAGEMENT BEHAVIOR ON FINANCIAL STATEMENTS OF LISTED COMPANIES: THE CASE OF VIETNAM
Thu Trang Ta, Thi Hai Yen Cao, Thi Minh Trang Le, Minh Nhi Kieu, Thu Thuy Tran and Phuong Nga Le
School of Accounting and Auditing, National Economics University
ESTIMATING AND PREDICTING LOSS GIVEN DEFAULT (LGD) IN A COMMERCIAL BANK FOR THE RETAIL BANKING SECTOR
EY Consulting Vietnam Joint Stock Company
Hoang Duc Manh
National Economics University
Transmit Beonemies Chiversuy
SESSION 3: FINANCE 2
ANALYZING ERROR METRICS FOR ESTIMATING IMPLIED VOLATILITY
Saif Siddiqui and Mahak Manzoor
Jamia Millia Islamia - A Central University
SUPERVISORY BOARD CHARACTERISTICS AND FIRM PERFORMANCE: EVIDENCE FROM VIETNAMESE LISTED FIRMS
Bui Thi Le Minh
Faculty of Foreign Language, National Economics University
Duong Thi Chi
School of Accounting and Auditing, National Economics University
FACTORS AFFECTING THE INTENTION TO USE FINTECH IN SECURITIES TRANSACTIONS IN VIETNAM
Tran Phuong Uyen, Ngo Thi Quynh Chi and Tran Phi Long
National Economics University

THE IMPACT OF FIRM SIZE ON FIRM PERFORMANCE OF NON-FINANCIAL COMPANIES LISTED ON THE VIETNAMESE STOCK MARKET
Pham Duc Cuong
School of Accounting and Auditing, National Economics University
Ngo Thi Khanh Linh
College of Economics, Vinh University
SESSION 4: FINANCE 3
CORPORATE SOCIAL RESPONSIBILITY, FINANCIAL STABILITY AND SUSTAINABLE DEVELOPMENT OF THE BANKING SECTOR IN VIETNAM AND CAMBODIA
Khuc The Anh and Bui Kien Trung
National Economics University
Nguyen Duc Duong
University of Southampton
CORPORATE GOVERNANCE CHARACTERISTICS AND FINANCIAL DISTRESS: AN EMPIRICAL ANALYSIS IN VIETNAM
Uyen Diep To
Hung Vuong University, Phu Tho, Vietnam
Ngoc Le Kim
National Economics University, Hanoi, Vietnam
Cuong Le Van
Hung Vuong University, Phu Tho, Vietnam
THE IMPACT OF GREEN BOND ISSUANCE ON THE PERFORMANCE OF FIRMS ISSUING GREEN BONDS: EVIDENCE FROM JAPAN IN 2015 - 2022 .308
Ngo Thanh Xuan, Nguyen Ngoc Linh, Lai Phuong Anh, Nguyen Gia Linh and Dang My Hanh
National Economics University, Griffith University
Nguyen Thu Hang
National Economics University

THE IMPACT OF INTELLECTUAL CAPITAL ON CORPORATE
FINANCIAL PERFORMANCE 327
Quoc Tuan Giang and Dinh Phung Tran
Saigon University
SESSION 5: BUSINESS & ADMINISTRATION
EXPLORING FACTORS AFFECTING LOGISTICS SERVICE PROVIDERS'
ADOPTION OF MANAGEMENT INFORMATION SYSTEMS
Nguyen Duy Hong
FPT University, Ha Noi, Vietnam
Le Thi Hong Cham
YCH-Protrade Co., ltd, Bac Ninh, Vietnam
Vu Ha Anh
FPT Software Academy, Ha Noi, Vietnam
Nguyen Thi Hien and Do Thi Thu Thao
FPT University, FPT Polytechnic, Ha Noi, Vietnam
FACTORS AFFECTING THE JOINING THE SUPPLY CHAIN OF STARTUPS IN THE CONTEXT OF ECONOMIC SHOCKS: EVIDENCE FROM NIGHT-TIME ECONOMY STARTUPS IN RURAL NINH BINH, VIETNAM
Dao Trung Hieu
People's Committee of Nho Quan District, Ninh Binh Province
Thi Hong Diep Pham
VNU University of Economics and Business
Huong Ho
Vietnam Youth Academy
Nguyen Thu Hang
The Ho Chi Minh Communist Youth Union Central Committee
THE IMPACT OF TIGHTENING CORPORATE GOVERNANCE REGULATIONS ON EARNINGS MANAGEMENT IN DEVELOPING COUNTRIES - EVIDENCE FROM VIETNAM
Nam Giang Dao
Banking Academy of Vietnam

LINKING DIGITAL TRANSFORMATION, CORPORATE SOCIAL
RESPONSIBILITY, INNOVATION TO FIRM PERFORMANCE: THE
MODERATING ROLE OF SUSTAINABILITY STRATEGY AND RISK
MANAGEMENT410
Nguyen Van It
Ho Chi Minh City University of Industry and Trade, Vietnam
THE IMPACT OF GREEN ORGANIZATIONAL CAPABILITIES ON THE
ENVIRONMENTAL EFFICIENCY AT MULTINATIONAL CORPORATIONS:
THE MEDIATING ROLE OF GREEN INNOVATION IN INDIRECT SUPPLY
CHAIN MANAGEMENT439
Xuan Hung Nguyen
School of Trade and International Economics,
National Economics University, Vietnam
Thi Van Ha Nguyen
School of International Studies, Peking University, China
Minh Anh Pham, Trung Kien Nguyen
School of Trade and International Economics,
National Economics University, Vietnam
Thu Hang Le
College of Technology, National Economics University, Vietnam
Manh Dung Tran
Journal of Economics and Development,
National Economics University, Vietnam
SESSION 6: ECONOMIC DEVELOPMENT & SOCIAL ISSUES
RESEARCH ON FACTORS AFFECTING SUSTAINABLE INDUSTRIAL
DEVELOPMENT IN QUANG NINH PROVINCE471
Nguyen Thi Thanh Hieu, Hoang Thi Lan Huong and Nguyen Thi Le Thu
National Economics University

Dang Thanh Binh

Quang Ninh Province

SLOVAK AND UKRAINE FARMING EMPLOYMENT: CURRENT CHALLENGES AND PROSPECTS
Fesun Anastasiia, Qineti Artan and Nambuge Dimuth
Slovak University of Agriculture in Nitra
VIETNAM'S HEALTHCARE SYSTEM MODERNIZATION AS PART OF SOCIO-ECONOMIC DEVELOPMENT UP TO 2030
Mazyrin Vladimir
Institute of China and Contemporary Asia, Russian Academy of Sciences
Shcherbenko Maria N.
Institute of Asian and African Studies, Lomonosov Moscow State University
ANALYSING PERCEPTION OF DATA SECURITY AND PRIVACY FRAMEWORK OF PATIENT'S DATA IN INDIAN HOSPITALS
Arvind Kumar
Department of Computer Applications, Manav Rachna International Institute of Research and Studies, Faridabad, India
Pankaj Kumar Gupta
Department of Management Studies, Jamia Millia Islamia, New Delhi, India
Ayush Gupta
Cyber Security Expert, Helsinki, Finland
SESSION 7: MACROECONOMICS
THE IMPACT OF REMITTANCES ON DOMESTIC INVESTMENT 545
Dang Ngoc Bien
School of Banking and Finance, National Economics University
Tang Thi Thao Nhung and Duong Hong Ngoc
NEU College of Economics and Public Administration,
National Economics University
Le Hong Quy
NEU College of Business, National Economics University
Nguyen Thi Thai Ha
School of Banking and Finance, National Economics University

ROLE OF FDI AND LOCAL GOVERNMENT EXPENDITURE ON
EMPLOYMENT GROWTH BY PROVINCE IN VIETNAM565
Phung Mai Lan
Thuyloi University
THE IMPACT OF MONETARY POLICY ON STOCK PRICES IN THE
VIETNAMESE STOCK MARKET583
Nguyen Thi Minh Hue
School of Banking and Finance, National Economics University
Nguyen Lien Huong
International School of Management and Economics,
National Economics University
THE IMPACT OF FOMO ON INVESTMENT DECISIONS IN GOLD: THE
CASE OF VIETNAM604
Xuan Hung Nguyen and Manh Dung Tran
Xuan Hung Nguyen and Manh Dung Tran National Economics University, Vietnam
National Economics University, Vietnam
National Economics University, Vietnam Dieu Anh Bui, Nam Anh Le, Quynh Trang Nguyen, Kim Ngan Nguyen
National Economics University, Vietnam Dieu Anh Bui, Nam Anh Le, Quynh Trang Nguyen, Kim Ngan Nguyen School of Advanced Educational Programs,
National Economics University, Vietnam Dieu Anh Bui, Nam Anh Le, Quynh Trang Nguyen, Kim Ngan Nguyen School of Advanced Educational Programs, National Economics University, Vietnam
National Economics University, Vietnam Dieu Anh Bui, Nam Anh Le, Quynh Trang Nguyen, Kim Ngan Nguyen School of Advanced Educational Programs, National Economics University, Vietnam Thi Minh Phuong Nguyen
National Economics University, Vietnam Dieu Anh Bui, Nam Anh Le, Quynh Trang Nguyen, Kim Ngan Nguyen School of Advanced Educational Programs, National Economics University, Vietnam Thi Minh Phuong Nguyen Vinh University, Vietnam
National Economics University, Vietnam Dieu Anh Bui, Nam Anh Le, Quynh Trang Nguyen, Kim Ngan Nguyen School of Advanced Educational Programs, National Economics University, Vietnam Thi Minh Phuong Nguyen Vinh University, Vietnam TWIN GREEN AND DIGITAL GROWTH: THE CASE OF VIETNAM628

THE IMPACT OF FOMO ON INVESTMENT DECISIONS IN GOLD: THE CASE OF VIETNAM

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Abstract:

This research investigates the impact of the Fear of Missing Out (FOMO) on gold investment decisions in Vietnam. Psychological determinants such as loss aversion and herd behavior are analyzed to determine how they influence FOMO and gold investment decisions. Data were collected from 587 responses, and multi-group analysis using PLS-SEM software was conducted to examine differences among various groups within the sample. The results indicate that FOMO significantly influences investment decisions in gold, especially when combined with loss aversion and herd behavior. Anticipated regret has a negative relationship, while subjective expected pleasure has a positive relationship with gold investment decisions. To mitigate the impact of FOMO, the study suggests enhancing financial education and developing decision-support tools. In addition, the research emphasizes the importance of effective communication in managing investor psychology.

Keywords: FOMO, gold investment, herd behavior, investment decision, loss aversion.

1. Introduction

In the context of global economic instability and the impact of the COVID-19 pandemic, along with the significant influence of Russia's special military operation in Ukraine, international trade activities have been greatly affected, causing prices of various commodities, including gold, to rise and reach new peaks continually. From gold bars and rings to gold jewelry, these items have become focal points for investors. The management of the domestic gold market is regulated by Decree 24/2012/ND-CP, which mandates that the State Bank of Vietnam has the exclusive right to produce and manage gold bars. However, given the sharp volatility in gold prices, many have called for government intervention to align domestic gold prices

more closely with global prices and to curb speculation and gold smuggling. Experts also emphasize that high gold prices could attract speculators, thereby reducing investment capital in productive and business activities, negatively impacting the nation's economic recovery.

In the context of a highly volatile gold market, the Fear of Missing Out (FOMO) can drive investors to make hasty decisions without careful consideration, leading to negative consequences. At a macroeconomic level, a sudden surge in demand for gold can inflate prices beyond their intrinsic value, potentially creating asset bubbles and significant volatility in the financial markets (Gupta and Shrivastava, 2022). This may exacerbate inflation, forcing central banks to adjust monetary policies, thereby impacting interest rates and economic growth (Elhai et al., 2016). Government intervention might be required to stabilize the market through financial regulatory measures (Hayran et al., 2020). At a mesoeconomic level, capital may be withdrawn from the stock market to invest in gold, reducing liquidity and increasing volatility (Milyavskaya et al., 2017). Industries that use gold may face rising production costs, affecting profitability and competitiveness (Elhai et al., 2016). Businesses may also shift strategies, prioritizing gold hoarding over investing in expansion projects or research and development (Gupta and Shrivastava, 2022). On a microeconomic scale, individuals may suffer financial losses from purchasing gold at high prices, resulting in losses when prices decline (Milyavskaya et al., 2017). This can severely impact personal wealth and financial planning and cause missed opportunities for more profitable investments. Moreover, financial stress from such losses can affect quality of life and create psychological pressure within families. Socially, an excessive focus on gold can lead to investment imbalances, causing instability in communities and the broader economy (Gupta and Shrivastava, 2022; Hayran et al., 2020).

FOMO is a significant psychological factor that induces anxiety and loss of control in investment decisions, particularly in volatile markets like cryptocurrencies and gold (Przybylski *et al.*, 2013). Research indicates that FOMO can lead to poorly considered financial decisions driven by anxiety and depression (Elhai *et al.*, 2016). FOMO can also result in severe negative outcomes, increasing risk and reducing investors' ability to exercise self-control (Oberst *et al.*, 2017). It often pushes investors to make rushed decisions to avoid the feeling of missing out on opportunities (Crocker, 2012). Retail investors' decisions are also significantly influenced by herd behavior and loss aversion, with FOMO acting as an intermediary that amplifies the impact of these psychological determinants on investment decisions (Gupta and Shrivastava, 2022). Protective and risk determinants in trading are all affected by FOMO, leading to imbalances in investment decisions (Delfabbro *et al.*, 2021).

The research and evaluation of the impact of FOMO (Fear of Missing Out) and related determinants on physical gold investment decisions in the Vietnamese market aim to propose solutions for gold investors to mitigate the negative effects of this factor. Additionally, it offers recommendations for businesses and the government to stabilize and develop the gold market in Vietnam.

2. Literature review

2.1. Studies of fear of missing out

The impact of FOMO has garnered the increasing interest of researchers across various fields, including psychology, management information systems (MIS), and medicine (Przybylski, 2013; Wegmann, 2017; Abel, 2016; Lai, 2016; Wolniewicz, 2018). Specifically, psychologists have posited FOMO as a severe obsession akin to a fixation on social trends (Przybylski, 2013; Riordan, 2018). Within the MIS domain, FOMO has been linked to emotional fluctuations, leading to excessive social media and smartphone usage (Abel, 2016; Lai, 2016; Wolniewicz, 2018). Furthermore, FOMO has been conceptualized as an addictive psychological symptom within medical fields such as psychiatry and psychopathology.

Early research on FOMO primarily focused on anxiety disorders or fear of social isolation leading to addictive behaviors (Przybylski, 2013). However, recent studies have revealed a more nuanced understanding of FOMO, emphasizing its social relational aspect, coupled with a strong desire for social belonging (Abel, 2016; Hodkinson, 2016; Lai, 2016; Wolniewicz, 2018). According to Abel *et al.* (2016), FOMO is categorized into three main dimensions: self-consciousness, social interaction, and social anxiety. Meanwhile, Lai *et al.* (2016) focused on the core aspects of FOMO, namely the need for connection and psychological pain. In conclusion, research indicates that FOMO not only revolves around the desire for social connection and the fear of social isolation (Przybylski, 2013; Wolniewicz, 2018) but also emerges as a pervasive psychological phenomenon characterized by the fear of being disconnected from social networks and a constant need to stay updated on the activities of others (Wegmann, 2017). This reflects individuals' intrinsic need for belonging and understanding of ongoing events.

2.2. Studies of gold investment

Gold has long held its status as a prized asset and a reliable store of value. Numerous international studies have underscored gold's pivotal role in the global financial system, particularly during periods of economic instability. The historical significance of gold in various monetary regimes has been extensively documented by scholars such as Lindert (1969), Eichengreen (1990), and Monnet and Puy (2020). In contemporary finance, gold is recognized as an effective hedge against risk, with

research by McCown and Zimmerman (2006) and Capie, Mills and Wood (2005) demonstrating its role as a safe-haven asset during turbulent market conditions. Extensive research has explored the relationship between gold and economic variables such as inflation, exchange rates, and stock market volatility (Baur and McDermott, 2010; Abid *et al.*, 2020).

Although numerous scholarly publications have contributed to the relationship between FOMO and investment behavior, a comprehensive review of the components of the link between FOMO and gold investment decisions, especially within the Vietnamese context, has not been thoroughly undertaken. Most previous studies have focused on developed and emerging markets, where distinct market characteristics might yield findings that are not directly applicable to the Vietnamese market. This research gap serves as the primary motivation for conducting this study, which aims to address this significant gap, offering valuable insights into the gold investment behavior of Vietnamese investors to elucidate the role of psychological and social determinants in shaping these decisions. By doing so, this research contributes to the advancement of behavioral finance theory and offers practical insights for investors, fund managers, and policymakers in Vietnam.

3. Theoretical framework and hypotheses development

3.1. Fear of missing out

FOMO has been defined as "a pervasive apprehension that others may be having rewarding experiences from which one is absent," and is characterized by a desire to maintain a continuous connection with the experiences of others (Przybylski *et al.*, 2013). Since the advent and widespread use of social media, FOMO has become an increasingly prevalent social phenomenon (Dutot, 2020) and is now a developing scientific concept within consumer psychology (Bui *et al.*, 2022).

However, FOMO appears to be a distinct construct, albeit one that is inherently related to other concepts. A necessary condition for the occurrence of FOMO is the perceived missing of an experience that is relevant to oneself (Good and Hyman, 2021). This implies a connection to an individual's self-concept. Consequently, FOMO is linked to concepts of social comparison and reflected appraisals, as these are integral to self-concept formation (Tedeschi, 1986).

Previous research has demonstrated that FOMO is conceptually distinct from other related consumer behavior constructs such as novelty seeking, consumer susceptibility to interpersonal influence, and envy (Good and Hyman, 2020; Zhang *et al.*, 2020). Furthermore, the concept differs from perceived scarcity, as scarcity involves a state of deprivation that may compel individuals to take specific actions

(Suri *et al.*, 2007), whereas FOMO represents an internal feeling of missing out on experiences that others are discussing, having, or enjoying.

3.2. Gold investment decision

According to Fabozzi (2015), investing involves purchasing an asset with the intention of selling it later at a higher price to generate a profit. Investment decisions require an initial cash outlay to obtain a return on investment as well as future cash flows. Gold investment decisions refer to the choices made by investors to allocate funds toward gold, and a variety of determinants can influence these decisions. The significance of gold as an investment vehicle has been the subject of numerous studies. Rivera-Castro *et al.* (2014) and Worthington *et al.* (2007) have argued that gold is an ideal asset for portfolio diversification and serves as a hedge against inflation both in the short and long term. Lawrence (2003) found that gold is one of the best securities for portfolio diversification as it often generates positive returns for investors over extended periods. Considerable researchers have explored the determinants influencing gold investment decisions, but there is limited research addressing the psychological determinants. In Vietnam, non-physical gold, such as gold ETFs, has not yet emerged or become widespread. The gold market primarily deals in physical gold, such as gold bars and gold jewelry.

3.3. Hypotheses design

3.3.1. Loss aversion and FOMO

Kahneman and Tversky's seminal research (1979) introduced the concept of loss aversion. According to their prospect theory, individuals experience pain from losses that are roughly twice as powerful as the pleasure they derive from gains. Dar and Hakeem (2015) explain that loss aversion is the phenomenon whereby investors experience greater pain from potential losses than pleasure from profitable investments. Bailey *et al.* (2011) confirmed in their research that investor behavior and decision-making are significantly influenced by the disposition effect or loss aversion bias, where investors tend to sell winning stocks and hold onto losing ones. This often leads to biased investment decisions. Loss aversion has a significant positive impact on FOMO in investment decisions and investor behavior (Gupta and Shrivastava, 2021). Based on these findings, we propose the following hypothesis:

H1: Loss aversion has a positive impact on FOMO.

3.3.2. Herd behavior and FOMO

Christie and Huang (1995) characterize herd behavior as a situation where individuals suppress their personal beliefs and base their investment decisions entirely on the collective behavior of the market or mimic the actions or emotions of

other investors, even if they disagree with the market's consensus. In investment, herd behavior occurs when investors make buy or sell decisions based on the actions of the majority, rather than on their own risk tolerance (Waweru *et al.*, 2008). Kang *et al.* (2020) and Tarjanne (2020) have affirmed the relationship between FOMO and herd behavior. They suggest that FOMO drives consumers to engage in collective consumption to achieve psychological comfort.

Their peers often influence an individual's collective consumption decisions, and investment decisions are frequently based on advice from friends or relatives due to a lower perceived likelihood of conflicts of interest compared to other sources (Kuchler and Stroebel, 2021). The pervasion of FOMO leads to herd behavior, which continuously propels stock prices upward (Hershfield, 2020). Based on these findings, the authors propose the following hypothesis:

H2: Herd behavior has a positive impact on FOMO.

3.3.3. FOMO and anticipated regret

Regret is a negative emotion grounded in the realization or imagination that one's current situation would have been better had one made a different decision (Zeelenberg, 1999). Psychologically, "anticipated regret" is a convenient collective term for the major psychological effects of the various anxieties decision-makers face before actual losses occur. Such anxieties, including anticipated guilt and shame, stimulate hesitation and doubt, emphasizing the realization that even the most attractive options may not yield good outcomes (Janis and Mann, 1977). When making purchases, consumers often ponder thoughts such as, "If I buy this today and find it cheaper later, I will regret my purchase" (McConnell *et al.*, 2000). This is particularly evident on online platforms where investment information can be accessed and shared rapidly, and feelings of regret can emerge instantaneously.

Based on recent research indicating a potential link between FOMO and anticipated regret (Hayran *et al.*, 2020), the negative impact of FOMO may mitigate anticipated regret by providing consumers with a personally acceptable reason to acquire assets (Good and Hyman, 2020), such as cryptocurrency. Therefore, we hypothesize that individuals experiencing FOMO are likely to anticipate fewer feelings of regret (regarding their investment decisions). Based on these findings, the authors propose the following hypothesis:

H3: FOMO has a negative impact on anticipated regret.

3.3.4. FOMO and subjective expected pleasure

"Subjective expected pleasure" is defined as a psychological state in which an individual is certain about the positive emotions they will experience in a future

consumption event (Moore, 2014). Individuals imagine how good or bad they will feel when experiencing specific outcomes, under the condition that the envisioned future event has actually occurred (Baumgartner *et al.*, 2008). Thus, if consumers perceive strong positive emotions toward a consumption opportunity, they anticipate experiencing greater subjective expected pleasure from purchasing and consuming (Alba and Williams, 2013).

Firstly, we hypothesize that experiencing FOMO in an investment opportunity leads to the anticipation of pleasure from both financial and social satisfaction. This is because, according to social comparison theory (Festinger, 1954; Gerber *et al.*, 2018), the effects of FOMO trigger consumers' emotional responses by highlighting the presence of an upcoming experience that others may have already or will soon enjoy. This reaction can be particularly strong in uncertain situations (e.g., in cryptocurrency environments) where consumers tend to evaluate the outcome of their decisions by comparing themselves to the achievements of others. As a result, consumers caught up in this temporary state of FOMO may anticipate the potential emotions from likely outcomes. Based on these findings, the following hypothesis is proposed:

H4: FOMO has a positive impact on Subjective expected pleasure.

3.3.5. FOMO and gold investment decision

When individuals observe, read, or learn about the actions of others, they experience FOMO and feel as though they are missing out on something (Abel et al., 2016). FOMO has been shown to be a significant influence on consumer decisionmaking (Kang et al., 2020). When under its influence, investors desire higher returns and feel that they may miss out on potential opportunities if they do not act immediately (Dennison, 2018). Investors are often perceived as overlooking events when acting out of fear, and thus, their actions may be biased. The effects of FOMO lead individuals to repeatedly make suboptimal financial decisions. Specifically, when consumers are exposed to the effects of FOMO, they tend to re-invest at higher rates, even after experiencing prior losses (Friederich et al., 2024). When examining the relationship between investor FOMO and the investment decisions of individual investors, Shiva et al. (2020) found a strong correlation between the two. Observing a group of investors who have a shared preference for a particular sector that has previously experienced strong growth in the market, these investors will now develop a sense of FOMO regarding potential returns upon seeing others succeed through investments in that sector (Hershfield, 2020). From this point, FOMO begins to impact their investment decisions. Based on these findings, the following hypothesis is proposed:

H5: FOMO has a positive impact on gold investment decisions.

3.3.6. Anticipated regret and gold investment decision

The significance of regret in evaluation and decision-making has been acknowledged by several scholars (e.g., Shih and Schau, 2011). While regret refers to the negative evaluation of past decisions, anticipated regret occurs before a decision is made when an individual imagines the regret they might feel if they were to make a particular choice (Wong and Kwong, 2007). Consequently, this study focuses on anticipated regret, as it examines individuals' experiences related to potential future decisions (i.e., investment decisions) rather than past ones (Hayran *et al.*, 2020). Individuals can anticipate potential counterfactual choices and associated mental costs before making investment decisions by mentally simulating possible outcomes (Shih and Schau, 2011). Therefore, before making a decision, consumers may anticipate that if the outcome is not as expected, they will experience anticipated regret, which could motivate them to alter their decision. Accordingly, the following research hypothesis is proposed:

H6: Anticipated regret has a negative impact on gold investment decisions.

3.3.7. Subjective expected pleasure and gold investment decision

Individuals who invest their money may experience positive emotions when they make a profit and negative emotions when they experience a loss; therefore, the subjective expected pleasure derived from an investment can influence investment decisions (Cheng, 2014). FOMO has a strong social component, manifested in the fear of not being part of something (Zhang *et al.*, 2020). Consequently, anticipated pleasure may also stem from a sense of belonging to the community of cryptocurrency investors or even from the idea of being smarter than others and recognizing an opportunity when it arises.

Previous research has shown that the effects of FOMO can drive consumer behavior by anticipating the pleasure derived from a consumption experience (Good and Hyman, 2021). For instance, anticipated excitement refers to the feelings of happiness (Brandstätter and Kriz, 2001) that consumers experience prior to making a purchase due to the anticipation of positive outcomes that will result from that decision (Sierra and Hyman, 2011). Thus, in the context of cryptocurrency investment, individuals may anticipate the economic and/or social benefits that can be derived from purchasing such an asset. Therefore, we argue that the effects of FOMO increase subjective expected pleasure, which leads to an increase in investment intention (Moore, 2014). Accordingly, the following research hypothesis is proposed:

H7: Subjective expected pleasure has a positive impact on gold investment decisions.

3.3.8. The mediating role of impulsivity on the relationship between FOMO and gold investment decision

Impulsivity has been identified as a significant factor in individual decisionmaking and has been extensively studied as a considerable personality risk factor (Fenton-O'Creevy et al., 2018; Passanisi and Pace, 2017). Impulsivity refers to an individual's tendency to respond quickly and unplanned to internal or external stimuli without considering the negative consequences of those responses for oneself or others (Moeller et al., 2001). It can be viewed as a personal disposition characterized by a lack of careful consideration and planning for tasks, seeking stimulation, risktaking, and hasty decision-making (Chen et al., 2015). Recent findings suggest that individuals with higher levels of FOMO are more likely to be impulsive (Çeliket et al., 2019). However, while individuals with higher trait-based FOMO exhibit higher levels of impulsivity, we hypothesize that for situationally induced FOMO, the positive relationship between FOMO and investment intention is stronger for individuals with lower levels of impulsivity. Overall, many researchers have shown that less impulsive individuals are also capable of engaging in unplanned purchases (Hui et al., 2013) but often require an external motivation to do so (Suher and Hoyer, 2020). Accordingly, the following research hypothesis is proposed:

H8: There is a mediating role of Impulsivity on the Relationship Between FOMO and gold investment decisions (the impact is stronger (weaker) at lower (higher) levels of impulsivity).

3.3.9. The mediating role of fear and self-empowerment on the relationship between FOMO and gold investment decision

Recent research by Wen and Chang (2022) indicates that feelings of victory often create a sense of power and control, therefore leading to greater risk-taking, whereas feelings of defeat diminish feelings of power and consequently reduce risky behavior. Thus, consumers who have actually profited from a cryptocurrency investment should be more inclined to reinvest, while those who have incurred losses should have fewer intentions to reinvest. However, given that FOMO exerts a powerful influence on consumer investment behavior and mitigates risk-mitigating mechanisms such as anticipated regret, it is intriguing to consider how FOMO's effects might alter the natural effects of winning or losing. Similarly, an individual's level of FOMO may account for frequent and excessive behaviors that can have detrimental impacts on their well-being, such as social media and online gaming addiction (e.g., Duman and Ozkara, 2021; Dutot, 2020). Therefore, based on the foregoing arguments, the effects of FOMO may stimulate consumers to continuously invest in cryptocurrency.

H9: There is a mediating role of Fear and Self Empowerment in the Relationship Between FOMO and gold investment decision

3.3.10. Proposed research model

Loss Anticipated aversion Н3-Н6-H1+ regret H5+ Investment FOMO Decision H2+ H7+ Herd Subjective behavior expected pleasure H8+ Impulsivity

H9-

Fear & Self-Empowerment (DYOR)

Figure 1: Research model proposed

4. Research methodology

4.1. Data collection

The authors employed a combination of two methods: qualitative and quantitative research. For the qualitative approach, they utilized a sociological investigation method to gather multidimensional information from experts, with the aim of building a theoretical foundation to refine the measurement scale and develop the official survey questionnaire. For the quantitative approach, the authors collected secondary and primary data from credible sources such as domestic and international journals, related research studies, and reliable websites, which were used for searching and filtering information.

Regarding the quantitative method, from December 2022 to June 2024, the authors collected 612 responses from research subjects. After processing the data and eliminating invalid responses, 587 valid questionnaires remained, accounting for 95.9% of the total collected. This data was then analyzed to produce the final research results.

1: Descriptive data analysis

1. Descriptive data analysis								
Variables	Frequency (n=584)	Percentage (%)						
Gender								
Male	269	45.8						
Female	318	54.2						
Age								
15 - 24	60	10.2						
25 - 34	95	16.2						
35 - 44	115	19.6						
45 - 54	221	37.6						
Above 55	96	16.4						
Income								
Under 10M	60	10.2						
10 - 20M	95	16.2						
20 - 30M	140	23.9						
30 - 40M	117	19.9						
Above 40M	175	29.8						
FSE								
1	180	30.7						
2	186	31.7						
3	221	37.6						

In the quantitative research section, to determine the impact of psychological messages on investment decisions, we divided the sample into three random groups. Each group received one of three types of messages: fear-inducing messages, self-empowerment messages (DYOR), and neutral messages. We analyzed the differences between the groups to assess the effect of each type of message on participants' emotions and investment decisions.

Three types of messages were used: (i) Fear message: 9 out of 10 investors suffer severe losses when investing in gold. (ii) Self-empowerment (DYOR) message: Be smarter than others and do your own research first. (iii) Neutral message: Gold is a volatile asset. Please consider all the consequences linked to this investment

4.2. Variables measurement

To obtain data for running the structural equation model, the research team issued a questionnaire consisting of multiple-choice questions, rated on a 5-point ranging from 1 to 5. From this, a preliminary survey form and an official were developed and subsequently used for investigation (see Table 2).

Table 2: Measurement scales

Variables	Codings	Details			
	LA	Your prior loss experience highly affects your risk-taking ability.			
Loss aversion		You usually have the tendency to avoid selling gold when the gold price decreases			
		You usually sell gold when the gold price increases.			
НВ		You prefer to invest in gold in which your peers and relatives have invested.			
Herd		You analyze the customer's/investors' preferences before you invest in gold.			
behavior		You follow the market movements while buying or selling gold.			
		Other investors' recommendation of investment affects your gold purchases.			
	FM	It bothers you when you do not hear news about gold.			
		You get anxious when you do not know about determinants affecting gold prices in the future.			
FOMO		You would like to be immediately updated about the trends in the gold market.			
		You get worried when you are not able to check in on your portfolio.			
		It bothers you if you miss out on investment opportunities.			
		You fear being the last to know about news that is relevant to your portfolio.			

Variables	Codings	Details			
	ID	You feel satisfied with your investment decisions in gold.			
T		Your recent gold investment has met your rate of return expectation.			
Investment decision		Your investment has lower risk compared to the market in general.			
		Your normal rate of return is higher than the average rate of return of the gold market.			
	SP	Excited.			
Subjective		Elated.			
expected pleasure		Satisfied.			
1		Happy.			
	AE	I would be sorry I spent the money.			
Anticipated regret		I would be sorry because I should have saved the money.			
regiet		I would be sorry I did not spend the money on necessities.			
	IP	I act on the spur of the moment.			
Impulsivity		I say things without thinking.			
(BIS-Brief)		I don't pay attention.			
		I do things without thinking.			

4.3. Processing techniques

According to Hair *et al.* (2016), testing of the main effects and the moderating effects should be carried out separately to ensure an accurate estimate of the main effects. Therefore, partial least squares analysis (PLS-SEM) and analysis of variance (ANOVA) were used to test the theoretical hypotheses.

We conducted the following verification steps: (i) Scale reliability by Cronbach's Alpha coefficients. The scale is reliable to conduct the next test when Cronbach's Alpha ≥ 0.6 and the total variable correlation > 0.3; and (ii) Concluding hypotheses through analyzing partial least squares analysis (PLS-SEM) and analysis of variance (ANOVA), which is testing of the main effects and the moderating effects should be carried out separately to ensure the accurate estimate of main effects (Hair et al., 2016). It serves as a potent statistical technique capable of integrating quantitative data, incorporating cause-effect assumptions into the model, and analyzing multiple regression models simultaneously. Moreover, PLS-SEM enables the modeling of multidimensional relationships between variables within a comprehensive framework. Given the measurement model via the assessments of

reliability, convergent validity, and discriminant validity, PLS-SEM was deemed well-suited for the purposes of this study. Finally, (iii) Using MGA to test the difference among three experimental cases. According to Picon- Berjoyo (2010) and Schlagel and Sarstedt (2016), assessing MGA in PLSPM substantially enhances the ability of researchers to identify meaningful differences in multiple relationships across group-specific results.

5. Results and discussion

5.1. PLS-SEM measurement model testing

Table 3 shows the assessments of the measurement model. For reliability, all construct values of composite reliability and Cronbach's Alpha in this model were higher than 0.708 (Hair *et al.*, 2016). For the convergent validity, the values of the stracted (AVE) are all larger than 0.5 (Hair *et al.*, 2016).

3: Reliability and convergent validity assessment

Variables		Factor loading	Cronbach's alpha (α)	AVE	Composite reliability
Anticipated	AE1	0.838	0.785	0.698	0,874
regret	AE2	0.845			
	AE3	0.823			
FOMO	FM1	0.815	0.887	0.638	0,914
	FM2	0.826			
	FM3	0.781			
	FM4	0.780			
	FM5	0.812			
	FM6	0.778			
Herd behavior	HB1	0.772	0.763	0.584	0,849
	HB2	0.828			
	HB3	0.722			
	HB4	0.732			
Investor decision	ID1	0.777	0.790	0.613	0,864
	ID2	0.800			
	ID3	0.788			
	ID4	0.768			

Variables		Factor loading	Cronbach's alpha (α)	AVE	Composite reliability
Impulsivity	IP1	0.818	0.806	0.631	0,872
(BIS-Brief)	IP2	0.815			
	IP3	0.761			
	IP4	0.782			
Loss aversion	LA1	0.839	0.731	0.648	0,846
	LA2	0.818			
	LA3	0.756			
Subjective	SE1	0.733	0.793	0.616	0,865
expected pleasure	SE2	0.848			
	SE3	0.793			
	SE4	0.762			
IP x FM -> IP	x FM	1,000			

Sources: Compilations by the authors.

For the discriminant validity, the square root of AVE is higher than its highest correlation with any research construct according to Fornell and Larcker (1981) criterion. Table 4 shows the results of discriminant validity analysis, where all square root values of AVE are higher than the correlation among other constructs.

Table 4: Discriminant validity assessment

	AE	FM	HB	ID	IP	LA	SE
AE	0.836						
FM	-0.545	0.799					
HB	-0.286	0.387	0.764				
ID	-0.387	0.484	0.258	0.783			
IP	-0.263	0.504	0.151	0.332	0.794		
LA	-0.294	0.433	0.159	0.192	0.245	0.805	
SE	-0.311	0.443	0.300	0.426	0.178	0.175	0.785

Sources: Compilations by the authors.

5.2. Structural model testing

The structural model assessments include multicollinearity and R^2 , effect size f^2 , and statistical significance of structural relationships (Hair *et al.*, 2016).

Multicollinearity is tested by variance inflation factor values (VIFs). Hair *et al.* (2017) suggested that VIF values less than 5 are a satisfactory indicator of the absence of multicollinearity issues in the model. Looking at the VIF results shown in Table 5, all the calculated values are lower than 5, confirming no multicollinearity problem in this study. Adjusted R-squared values for four endogenous latent variables include anticipated regret (0.296), FOMO (0.289), subjective expected pleasure (0.195), and investment decisions (0.356). Thus, the independent and mediating variables explain 35.6% of the variation in the ID variable. Those values are slightly moderate and acceptable (Hair *et al.*, 2016).

Table 5: Variance inflation factor values

	AE	FM	HB	ID	IP	LA	SE	IP x FM
AE				1.435				
FM	1.000			2.005			1.000	
HB		1.026						
ID								
IP				1.347				
LA		1.026						
SE				1.259				
IP x FM				1.010				

Sources: Compilations by the authors.

Table 6: PLS main effects results

	Relationship	f square	t-value	Standardize estimate	p value	Result
Н6	AE -> ID	0.025	3.101	-0.151	0.002	Accepted
Н3	$FM \rightarrow AE$	0.423	15.891	-0.545	0.000	Accepted
Н5	FM -> ID	0.031	3.464	0.200	0.001	Accepted
H4	$FM \rightarrow SE$	0.244	11.524	0.443	0.000	Accepted
H2	HB -> FM	0.147	9.079	0.326	0.000	Accepted
	IP -> ID	0.024	3.654	0.142	0.000	Accepted
H1	$LA \rightarrow FM$	0.200	10.216	0.382	0.000	Accepted
Н7	SE -> ID	0.079	6.197	0.252	0.000	Accepted
Н8	$IP \times FM \rightarrow ID$	0.066	5.884	-0.194	0.000	Accepted

Sources: Compilations by the authors.

Results from Table 6 show that all the main effects are positive and significant at the level of 0.1%. According to Cohen (1988) and Hair *et al.* (2016), f^2 value is small, medium, and large if the values are 0.02, 0.15, and 0.35, respectively. Those effects range from small to large.

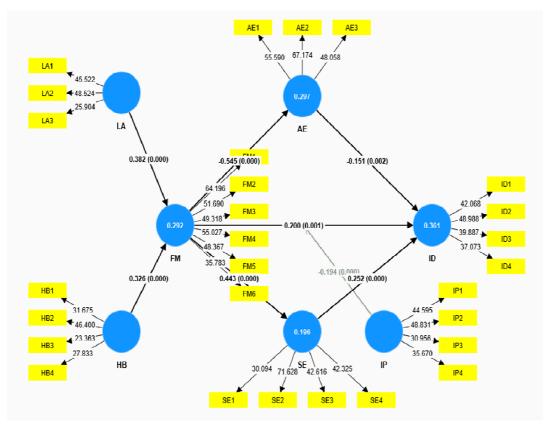


Figure 2: Results of testing the models (SEM)

Based on the findings in Figure 2, we test the study hypotheses. The results, shown in Table 6, support most of our hypothesized effects. Using SmartPLS, the hypotheses are tested using bootstrapping techniques. Bootstrapping, a resampling procedure, is run with a subsample size of 5,000 as a large sample size ensures lower variance between original values and mean values of regression path coefficients. Bootstrapping also helps ensure the stability of estimates (Davcik, 2014).

The analysis shows that loss aversion and herd behavior have a positive and significant impact on FOMO (β = 0.382, p < 0.05) (β = 0.147, p < 0.05), confirming hypotheses H1 and H2. This finding aligns with the study conducted by Gupta and Shrivastava (2021). According to the research model, loss aversion and herd behavior influence investment decisions through FOMO. Thus, the role of FOMO as a mediating variable in the relationship between loss aversion and herd behavior with investment decisions is also evaluated. Furthermore, the high t-value in the effect of

loss aversion on FOMO (t-value = 10.216) further strengthens the hypothesis describing the strong influence of loss aversion on FOMO.

According to the analysis results, FOMO demonstrated a significant negative effect on anticipated regret in investment decisions (β = -0.545, p < 0.05), confirming hypothesis H3. These findings are consistent with previous research by Friederich *et al.* (2024), which emphasizes the role of FOMO as a mediating factor between fear of missing out and herd behavior in investment decisions. Specifically, with a t-value of 15.891, the results highlight the strong impact of FOMO in reducing the feeling of regret when investors miss out on potentially profitable opportunities. Investors act to avoid FOMO rather than endure regret later on.

The analysis shows the positive effect of FOMO on the variable Subjective Expected Pleasure (β = 0.443, p < 0.05), thus confirming hypothesis H4. This result aligns with previous findings by Festinger (1954) and Gerber *et al.* (2018). When experiencing FOMO in an investment opportunity, individuals tend to anticipate pleasure from both financial and social aspects. This leads to an exaggeration of potential benefits and a minimization of possible risks, thereby increasing subjective expected happiness.

FOMO and investment decisions show a positive relationship (β = 0.200, p = 0.001). This result confirms hypothesis H5, indicating that FOMO has a positive impact on investment decisions, specifically in the context of gold investments. These findings provide evidence that emotions and social perceptions can significantly influence financial decisions, highlighting the importance of managing psychological determinants in investment.

Hypothesis H6 was also confirmed through the analysis (β = -0.151, p < 0.05), showing that anticipated regret has a negative impact on investment decisions. These results are consistent with the analysis by Friederich *et al.* (2023), which addressed the role of FOMO as a mediator between psychological determinants and investment behavior. The regret that investors feel after not participating in risky investment opportunities can lead them to be more cautious in their subsequent investment choices, aiming to minimize risks and avoid repeating the feeling of regret in the future. This suggests that anticipated regret plays a key role in shaping more prudent investment behavior, thereby contributing to long-term stability and success in personal investment activities.

5.2.1. Moderating effect testing

Moderating effect testing was conducted using MGA analysis to verify the moderating effects on dependent variables.

Table 7: DYOR moderates FOMO toward investment decisions

	Difference (dyor - fear)	Difference (dyor - none)	Difference (fear - none)	
FM -> ID	1.126	-0.518	-1.645	
2-tailed p value	0.000	0.000	0.000	

Sources: Compilations by the authors.

The analysis of the effectiveness of the self-empowerment message (DYOR) in moderating the impact of FOMO on investment decisions reveals significant differences between message types. Specifically, the DYOR message, compared to fear-inducing messages, increases the influence of FOMO on investment decisions (1.126, p=0.000), whereas when comparing DYOR with no message, this effect decreases (-0.518, p=0.000). This indicates that DYOR may encourage investment decisions based on information rather than emotion. On the other hand, fear-inducing messages significantly reduced the influence of FOMO (-1.645, p=0.000), demonstrating effectiveness in limiting impulsive investment decisions. These results highlight the importance of selecting the appropriate communication methods to regulate investor psychology in today's investment environment.

In short, this study reveals that FOMO significantly influences gold investment decisions in Vietnam. Determinants such as loss aversion and herd behavior interact with FOMO, affecting investment behavior. FOMO can reduce anticipated regret by encouraging quick actions and increasing expectations of positive outcomes. Impulsiveness acts as a key moderating factor, with highly impulsive individuals often making rapid decisions without thorough consideration, thereby amplifying the impact of FOMO.

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