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Research Article

Behavioral Factors and Market Stress: Investigating the Drivers of Financial Contagion During Crises

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Abstract Financial contagion, the rapid spread of market disturbances across countries or sectors, is a critical concern during periods of market stress. This study explores how behavioral factors—specifically investor sentiment and herding behavior—drive financial contagion during crises and how these effects are influenced by market stress. The research addresses the pressing need to understand the psychological forces behind contagion, particularly in volatile market conditions. Using structural equation modeling (SEM), the study tests ten hypotheses with data collected from financial professionals, including investors, analysts, and traders. It examines how investor sentiment and herding behavior impact financial contagion, with a focus on the amplifying role of market stress. The study also considers moderating factors such as market liquidity and institutional investor behavior. The findings reveal that both investor sentiment and herding behavior significantly contribute to financial contagion, especially in stressed market conditions. Market stress intensifies these effects, with less liquid markets being particularly vulnerable to sentiment-driven contagion. Herding behavior emerges as a critical driver of contagion during crises. This study provides valuable insights for policymakers and market regulators, emphasizing the need to integrate behavioral considerations into strategies for managing financial crises. By contributing to the behavioral finance literature, it underscores the importance of addressing psychological drivers in market regulation and risk management. Future research should investigate additional psychological factors and examine these relationships over longer periods to deepen understanding of financial contagion dynamics.

Keywords: Market Spillover, Investor Psychology, Collective Behavior, Market Turmoil, Emotional Responses, Financial Shocks, Cross-Market Linkages, Liquidity Effects, Crisis Impact, Investor Behavior Dynamics

1. Introduction

Financial contagion has attracted much attention from several perspectives on structure and macroeconomics. However, not as much has yet been known about the behavioral dynamics that lead to contagion, especially in times of stress in the markets. Such linkages are often tied to simultaneously increasing investor sentiment and herding behaviors, and they eventually accentuate the intensification of shocks.

The last definition has been the definition for years and entered the academic vocabulary: shocks-for example, a negative shock in a given market or region on the transmission to another market or region-which has become a key issue: the years of research work on it (Hurduzeu et al., 2021). This is most clear during financial crises. It is a result of shocks that inhibit their very causes and make the participants vulnerable to systemic risk. Earlier studies of contagion focused largely on macroeconomic fundamentals, such as trade linkages, policy responses, or financial interconnections, which were considered the primary channels of shock transmission (Sever, 2019; Yarovaya et al., 2022). Even though these structural explanations are critical, they frequently fail to encapsulate the nuances involved in human decisions made under uncertainty. Such behavioral factors serve as investor sentiment and herding behavior critical to amplifying its waves of contagion-but probably without much mentioning in existing literature.

Investor sentiment embodies the collective feelings and perceptions of market participants vis-a-vis an object. Emotions fueled by optimism, fear, and sometimes speculation can differ widely from the market fundamentals (Griffith et al., 2020). For instance, during a certain crisis, fear often rules the investor behavior, leading to panic sales and more volatility. On the other hand, too much optimism in a market boom could mean asset bubbles popping under stress, causing knock-on effects. Actions driven by sentiments can elicit movements that are quite irrationally determined; investors would depend more on emotions than rational analysis to result in movement (Bourghelle et al., 2022).

Emerging economies tend to have more such effects on emerging markets since the informational inefficiencies and weaker regulatory framework increase sentiment-driven upswings. Herding behavior, on the contrary, often refers to imitative behavior of investors acting like the rest, ignoring their own analysis or going against what the market

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fundamentals say (Bourghelle et al., 2022; Elgayar, 2021). Herding occurs in instances where investors assume that security is within numbers or that other market participants might have a better understanding of the markets beyond their own. In times of market shocks, the herding behavior amplifies contagion effects within the economies because of the self-reinforcing cycles of buying or selling that are attached to it (Ghorbel et al., 2023). If investors in one region start offloading assets out of panic of impending crisis, some would likely follow suit, resulting in mushrooming declines across interlinked economies. Effects of herding would be felt worse in an integrated financial system where actions of a few large players could have cascading effects across global markets.

In the growing understanding of these behavioral factors, they stand underexplored in terms of their contribution to financial contagion for a number of reasons. First, behavioral dynamics are usually too complex and messy to quantify well sufficiently so that traditional econometric approaches could apply to them (Choudhury et al., 2021). Second, the existing studies largely focus on macroeconomic variables or on structural linkages and, therefore, ignore the psychological-social aspects of investor behavior. Third, research has been restricted by a lack of primary data around behavioral factors like sentiment and herding, which most have hindered direct investigations concerning their roles in contagion.

Recent advancements in data collection and modeling techniques create opportunities to turn these gaps into further research. Because of recent growth in sentiment analysis techniques driven by machine learning and natural language processing, investor emotions can now be quantified based on textual data of news, social media, and financial reports into naturalized observations of investors' motivations and perceptions in stress periods through survey-based studies to directly observe herding behavior (Mushtaq et al., 2023; Yiu et al., 2024). Using this combination with advanced statistical methods like Structural Equation Modeling (SEM) will provide insight into the role of behavioral determinants in financial contagion.

The Investor's psychology causes most pronounced herding and sentiment effects around periods of severe market stress. Increased uncertainty, volatility, and systemic risk panic investors, resulting in strong emotions that further intensify herding behavior as individuals seek social endorsement through behavioral mimicry. For example, in a typical panic period during the COVID-19 turmoil along the globe, institutions and retail investors sold all their stock positions, leading to unprecedented volatility in the world's markets. Reflecting on the behavior of these movements also indicates that financial systems are prone to behavioral contagion since fear and uncertainty seeped rapidly through regions and asset classes (Xu, 2025).

As previously argued, the behavioral dynamics of contagions are not only of academic importance but also of significance for policy-makers and market participants. Policy-makers and authorities will greatly profit from a better grasp of the role played by sentiment and herding in developing regulations designed for mitigating contagion risks (Bouri et al., 2021). For instance, it is common to have circuit breakers and trading halts cool off in extreme volatility, thereby making panic-driven responses less likely. In summary, increased transparency and timeliness can also help counter misinformation and irrational decision-making.

For market participants, potentially higher knowledge of behavioral biases alerts them to better decision making during crisis moments. By making decisions based on fundamental analysis, institutional investors can resist going with the crowd and tend to play a stabilizing role (Bouri et al., 2021; Siegel, 2021). Retail investors are the ones who would need financial education programs promoting rationalized but risky investment behavior as highlighted by herding behavior owing to their vulnerability to sentiment-driven actions during such conditions.

Emerging markets face a unique set of challenges in the management of behavior contagion (Ahmad & Wu, 2022). Low levels of financial literacy, weaker regulatory frameworks, and high levels of volatility seem to be the normal features of these markets. Consequently, sentiment and herding effects become profound, magnifying shocks. It takes the form of targeted interventions like strengthening investor protections, enhancing market infrastructure, and promoting financial education to clear these hurdles (Ahmad & Wu, 2022; Ediagbonya & Tioluwani, 2023). Removing the roots of the behavioral biases will help minimize the exposure of emerging economies to the menace of contagion and build long-lasting financial stability.

This study will empirically providing evidence on the role of some behavioral factors with respect to financial contagion through the primary data collection from investors. The survey will account for a further set of key behavioral variables, which include sentiment, herding, and perceived market stress, among others, in both developing and developed countries (Ahmad & Wu, 2022). This will then apply the Structural Equation Modeling (SEM) in analyzing the relationship between these factors and contagion in the financial market. The SEM is most suitable for this study because its modeling ability effectively organizes the complex relationships between latent constructs while taking into account the chances for measurement error.

The preliminary findings from the survey yield several significant insights. First is that sentiment and herding are identified as key drivers of the contagion phenomenon, with possibly stronger effects in emerging markets. Second, market stress also acts as a moderator to enhance the effect of behavioral factors on contagion. Third, the interaction of sentiment and herding manifests itself more prominently during periods of systemic shocks like that of the COVID-19 pandemic (Rahikainen, 2023). These findings show how behavioral aspects of contagion are still to be explored, especially in the case of emerging countries.

Future research in this domain might probably take many directions. For one, studies could explore the cultural differences in terms of how they shape the behavioral

contagion mechanisms. For instance, while one could find relatively stronger herds among investors in collectivist societies than in more individualistic societies, a closer study may reveal the second aspect: how non-traditional assets like cryptocurrencies and energy markets contribute to contagion. These asset classes are generally volatile and characterized by a speculative nature that makes them highly attractive to sentiment-driven contagion. An additional area of interest for researchers would be combining machine-learning with behavioral finance to yield new perspectives on how to predict and prevent contagion (Aziz et al., 2022). They will be able to identify patterns and trends not easily perceived by human data analyzers from large datasets of text and numeric information that machine learning techniques can have in their own milieu.

The current research professes that behavioral factors are of primary importance in financial contagion, thereby giving credence to the arguments that need to better comprehend both sentiments and herding dynamics. Through primaries and sophisticated modeling mechanisms, researchers would even be able to unearth the psychological as well as social drivers of contagion and achieve an actionable insight for policy-makers and market participants. The increasing interconnectedness of financial systems necessitates that behavioral dimensions be taken into account in addressing contagion for the sustenance of global financial stability.

2. Literature Review and Hypotheses Development

This section explores the role of behavioral factors in financial contagion and critically develops hypotheses based on insights from previous studies.

2.1 Behavioral Factors in Financial Contagion

Financial contagion, which refers to the transmission of market shocks across countries/regions or asset classes, has been traditionally explained with the help of macroeconomic linkages and structural channels. At the same time, however, behavioral finance attempts to bring in other variables that attach to some psychological and social dimensions of market participants during crises.

-Among these dimensions investor sentiment and herding behavior appear to be the most important drivers of financial contagion.

-When one speaks of the aggregate emotional state of all market participants, one speaks of optimism, pessimism, fear, and euphoria. Research has shown that the so-called mass sentiment often tends to deviate from what is called market fundamentals and usually in crisis periods. An example of such arguments is presented by Guo (2019); that sentiment-driven trading distorts asset prices, producing and bursting bubbles. In periods of great uncertainty then, the sentiment turns to irrational behavior by market participants, resulting in increased volatility and amplified contagion effects. Pacelli et al. (2024) notes the importance sentiment has taken in systemic shocks-like the global financial crisis in 2008, where declines in markets were induced by sell-offs as an effect of fear.

Herd behavior is one of the dimensions of behavioral finance that primarily defines the tendency of groups to move with the actions of others-an act usually performed without independent analysis. As Vedadi and Greer (2020) defined it, "herding is rational response to uncertainty" where people think that "others may have better information than me." This behavior may, however, lead to undesired price movements creating instability in the financial market. Herding becomes most dangerous in interrelated systems: the actions of a few influential players cascade through different regions and asset classes (Sulejmani & Tevdovski, 2022). For example, Naeem et al. (2022) found that among herding behaviors, those during periods of market stress are mostly evident in amplification and result into contagions and spillovers.

Both sentiment and herding largely contribute to the extent of financial contagion; however, one major moderator of the relationship, stress in the market, is when there is increased volatility, systemic risk, and uncertainty during which behavioral biases are magnified among investors. Stress triggers stronger emotional responses to these market participants according to a study by Elgayar (2021) and Yarovaya et al. (2022), making sentiment and herding more effectual by expounding apparently how stress narrows down the impact of sentiments. These particular cases have proven to be accurate during the height of the COVID-19 pandemic, where increased panic was the result of unprecedented sell-offs due to herd theatrics (Corbet et al., 2020).

Herding behavior is that behavioral dimension, which indicates the tendency of investors to follow the action of others, with little consideration for the independent analysis. Perhaps the best description of herding was given by Vedadi and Greer (2020), where herding is taken as a rational response to uncertainty, assuming that others may have better information than me. Unfortunately, it can lead into erratic price movements and destabilizes the financial market. Herding is disastrous particularly in interrelated systems; because actions by a few influential players would cascade through different regions or classes of assets (Sulejmani & Tevdovski, 2022). For instance, some research conducted by Naeem et al. (2022) proved that herding behavior peaks at periods of stress in the market and increases spillovers and contagion.

Market stress by itself becomes the most significant moderating factor, in the midst of both sentiment and herding, on the extent of financial contagion. Investor behavioral estimation is likely to be worse during market stress since it is obviously characterized by heightened variance, systemic risk, and uncertainty. Stress indeed aggravates the emotional reaction from market participants, according to Elgayar (2021), making such types of sentiment and herding more effective in explaining how stress narrows down the impact of sentiments. During heightened stress, such as the COVID-19 pandemic, they were unraveled into panic-driven selling and herd behavior which heightened contagion significantly (Corbet et al., 2020).

2.2 Hypotheses Development

Theoretical and empirical insights from previous studies form the basis for the following hypotheses:

H1: Investor sentiment has a significant positive effect on financial contagion.

Investor sentiments obviously act as one of the handle into which financial contagion was identified. Guo (2019) state under excessive optimism or pessimism, irrational trading behaviors are triggered that distort asset prices while intensifying market volatilities. Senment-driven investors, who are generally emotional responders to market events, contribute to the rapid propagation of shocks (Elgayar, 2021). Besides, the catalytic role of sentiment in crises like that of the global financial crisis (Pacelli et al., 2024) marks its importance in contagion dynamics. Hence, this gives us H1, which posits that increased investor sentiment, whether positive or negative, greatly increases financial contagion.

H2: Herding behavior significantly increases financial contagion.

Herding behavior, as a result of such decision-making, especially during crises, has much impact. In fact, we have studies such as Vedadi and Greer (2020) and Sulejmani and Tevdovski (2022) that link herding to those causes, arguing that herding intensifies during bad news or uncertainty to give rise to correlated movements in asset price across markets. It has been recently noted by Zorgati et al. (2019) that herding produces such structural breaks in an otherwise normal market relationship, increasing the chance of contagion. In fact, it has been observed even in the emerging markets where the infrastructure of markets is weak and hence informational inefficiency makes the investors highly prone to follow what others do. Hence, H2: Herding significantly amplifies financial contagions.

H3: Market stress moderates the relationship between investor sentiment and financial contagion, strengthening the effect.

Market tension emphasizes the emotional responses of investors, thus making them more vulnerable to drives over sentiment. During systemic shocks, such as the COVID-19 pandemic, the co-mingling between stress and sentiment becomes profound. Corbet et al. (2020) presented evidence that selloffs during high-stress conditions are fear-driven and account for greater volatility and contagion. Likewise, Elgayar (2021) substantiated that during high-stress windows of time, the engagement of sentiment with contagion magnifies as emotions overwhelm entirely rational decision-making. Thus, H3 proposes that market stress moderates the effect of sentiment on financial contagion.

H4: Market stress moderates the relationship between herding behavior and financial contagion, strengthening the effect.

With the stressful conditions prevailing in the market, the environment tends more and more to uncertainty and intensification of herding behavior. As Vedadi and Greer (2020) and Naeem et al. (2022) emphasize, it leads investors to adopt behaviors of mimicking other kinds of behavior during crises, believing that it is the safest bet. Such behaviors lead to cycles of self-reinforcement in either buying or selling, leading to extensive contagion effects. Ionascuti and Dima (2022) showed that under stress, herding behavior changes from being based regionally to a global phenomenon because interconnected markets increase spillover effects. Thus, the H4 hypothesis focuses on strengthening the nexus of herding on financial contagion by market stress.

An aspect of alignment with current literature is the gap that these proposed hypotheses fill. Even though studied independently with regard to herding and sentiment's contribution to financial contagion, the interplay of herding and sentiment under such time as market stress is yet to be found literature wise. These bring in moderate effect of market stress and advances the studies on the behavioral factors at play in times of crisis. Last but not least, sentiment and herding analysis also build a behavioral dimension that marries well with traditional macroeconomics discourses on contagion.

Yet, challenges still persist; first, the behavioral measures such as the measures of sentiment or herding are difficult to deal with since they have an inherently subjective essence. Although methods such as sentiment analysis or surveys can yield insight, they cannot adequately describe the multiple facets of investor behavior. Second, the considered assumptions do not explicitly include external factors, such as intervention by regulation or geopolitical events, perhaps thus limiting the expanse of analysis. Future research might cover these issues by bringing in additional variables and considering contextual dynamics.

Thus, these hypotheses provide a sound platform for understanding the behavioral dimensions in financial contagion. This study, built on data obtained from primary sources and an advanced analytical technique, Structural Equation Modeling, offers empirical validation of such hypotheses to inform policymakers and market participants alike.

3. Methodology

This section outlines the population research, sampling strategy, data collection process, and the steps taken to address non-response bias, common method bias, and construct measurement.

3.1 Research Population and Sampling

Research Population

The study mainly focused on institutional direct investors and retail investors from developed countries (USA, UK, Japan) and emerging markets (Pakistan, India, Brazil). Such respondents include diverse types of investment behavior and financial decision-making, making them ideal for the study of financial contagion.

Sampling

A stratified random sampling was adopted in this case to ensure equal representation of developed and emerging markets. It avoids sampling bias and improves generalizability. Total population about 2000 investors contacted were 500 respondents to the survey.

3.2 Data Collection Process

Method of Data Collection

The distribution of data took place through a well-structured questionnaire that will include email as well as postal surveys. The questionnaire was designed to obtain a response on investor sentiment, herding behavior, market stress, and financial contagion.

Respondent Profile

The respondents included both institutional and retail investors with varying levels of market exposure. Table 1 summarizes their demographic and professional characteristics.

Table 1: Descriptive Statistics of Respondents

Category	Subcategory	Frequency	Percentage
Gender	Male	320	64%
	Female	180	36%
Market Type	Developed Markets	250	50%
	Emerging Markets	250	50%
Investor Type	Institutional	300	60%
	Retail	200	40%

Table 1 provides a detailed breakdown of respondents, ensuring a balanced representation across demographic and professional characteristics.

Importance of Respondents

Instrumental completes the understanding of financial contagion. Their investment behavior obviously influences the market. Instantly previous studies show that institutional investors are most likely to be the main drivers of market sentiment, while on the part of retail investors, they show a tendency to herd (Guo, 2019).

Non-Response Bias Analysis

Significance tests for non-response bias through Levene's test between e-mail and postal responses by holding firm characteristics as control variables was conducted. Table 2 summarizes the results.

Table 2: Non-Response Bias Analysis (Levene's Test)

Group	LEVENE'S TEST F VALUE	LEVENE'S TEST SIG.	T-TEST T VALUE	T-TEST DF	T-TEST SIG. (2-TAILED)	MEAN DIFFERENCE	STD. ERROR DIFFERENCE	95% CONFIDENCE INTERVAL OF THE DIFFERENCE
Email vs. Post	1.36	0.26	1.15	478	0.25	0.12	0.1	[-0.08, 0.32]
Developed vs. Emerging	2.11	0.14	1.62	478	0.11	0.18	0.11	[-0.04, 0.40]

Cited within text: Table 2 shows no significant differences between groups, indicating that non-response bias is not a concern in this study.

3.4 Common Method Bias

Traditional, commonly used procedure for assessing common method bias (CMB) was Harman's single-factor test. The result found that no single factor could explain at least 30% of the variance, which indicated minimal influence from CMB (F. Kock et al., 2021; N. Kock, 2020; Waseem & Yusoff, 2025).

3.5 Construct Measurement

Constructs were measured using validated scales adapted to the study's context. Table 3 outlines the constructs, their dimensions, and the sources of measurement

.

Table 3: Construct Measurement

Category	Subcategory	Frequency	Percentage
Gender	Male	320	64%
	Female	180	36%
Market Type	Developed Markets	250	50%
	Emerging Markets	250	50%
Investor Type	Institutional	300	60%
	Retail	200	40%

Table 3 provides details on the constructs and dimensions measured, ensuring alignment with theoretical frameworks.

4. Data Analysis

Data analysis is the important part of validity and reliability of the results. This part thus focuses on the two phases of analyzing work: the pretest and the pilot test. Both steps are important in the tool measurement as well as ensuring that the constructs are measured correctly. Usually, these two stages identify problems caused by issues such as clarity, reliability, and understanding. Hence, it also improved the quality of the research.

4.1 Pretest

The pre-trial was conducted with only 30 individuals, among them institutional and retail investors. It was supposed to test the questionnaire on clarity, structure, and any possible ambiguities that could confuse the participants. The selected respondents were to reflect the diversity of the target population of the study in order to have feedback that would represent all.

This pretest offered valuable insights into how the questions were worded and their clarity. It used the feedback to modify some areas in order to condense complex questions as well as be in line with the objectives of the study. The results of the pretest are summarized in Table 4 below.

Table 4: Pretest Results

Construct	Item Clarity (Mean)	Relevance (Mean)	Understandability (Mean)
Investor Sentiment	4.2	4.3	4.1
Herding Behavior	4.1	4.2	4.0
Market Stress	4.3	4.4	4.2
Financial Contagion	4.0	4.1	3.9

The findings pointed out the general clarity and relevance of the questionnaire towards the respondents, although there were slight issues with the financial contagion aspect. Overall means for item clarity, relevance, and understandability were very high-values strong enough to build confidence for moving into the next phase. Interpretation of the suggestions provided improvements on the wording and formats of the questions, especially for the financial contagion scale

.

4.2 Pilot Testing

Subsequent to the final refinement of the questionnaire, it was decided to use an expanded sample of 100 respondents for pilot testing. The sample consisted of both institutional and retail investors from developed and emerging markets, just like the final sample of the study. The purpose of the pilot was to assess the reliability and validity of the constructs and then to check for possible problems related to the revised questionnaire.

Pilot testing of measures was decided on the basis of the property of the constructs done using Cronbach's Alpha for internal consistency (Khokhar et al., 2024; Manley et al., 2021; Sarstedt et al., 2022). The factor loadings were also undertaken to see if all the items fit appropriately under the constructs they were supposed to be associated with. The results from the pilot test are presented in Table 5 below

.

Table 5: Pilot Test Results

Construct	Cronbach's alpha	Composite reliability	AVE
FC	0.850	0.887	0.533
HB	0.827	0.874	0.537
IS	0.883	0.907	0.551
MS	0.815	0.873	0.581

Strong internal consistency was evidenced by all constructs in the pilot test, with the Cronbach's Alpha values lying between 0.82 and 0.88 signifying scale reliability. All constructs had high mean values, indicating comprehension of the items by respondents, and low standard deviations, suggesting minimal variation in responses. Likewise, the factor loadings were within an acceptable range (0.63-0.80), indicating that each item was well aligned with its construct Again, it can be observed that these items were well integrated with their construct.

So, after all these tests, pilot and pretest, the revised questionnaire was considered ready for use in the full study because all constructs were found to show acceptable reliability and validity.

4.3 Discussion of Pretest and Pilot Test Results

The results from pretesting and piloting have convincingly shown that the questionnaire is effective in determining the constructs of concern. The pretest feedback initiated the revisions to address any ambiguities in the questions, particularly with the financial contagion scale. After the adjustments, the pilot study confirmed that the questionnaire would effectively apply to a larger population in terms of validity and reliability.

The pilot test showed an excellent internal consistency for all constructs, indicated by a Cronbach's Alpha value, which is important since it indicates that items within each construct are correlated and measuring the same underlying phenomenon. This factor loading supports the claim as all items fall in the range 0.60-0.80, assuring that constructs are operationalized properly.

In sum, pretest and pilot-test were significantly helpful in improving the precision of the measurement instrument, required for actual data collection. The next step involves surveying the larger population using this validated instrument to capture primary data while expecting that constructs sustain high reliability and validity.

5. Reliability and Convergent Validity

5.1 Reliability Assessment

Reliability is what would make a measure consistent in that it shows the same outcome from similar conditions. In this study, reliability was established through Cronbach's Alpha, the usually used measurement for internal consistency. Rule of thumb is that Cronbach's Alpha above 0.7 provides acceptable reliability (Joseph et al., 2021; Manley et al., 2021; Sarstedt et al., 2022). The results of Cronbach's Alpha for each construct are presented in Table 6.

Table 6: Cronbach's Alpha Results for Reliability

Construct	Cronbach's alpha
FC	0.850
HB	0.827
IS	0.883
MS	0.815

The Cronbach's Alpha values for all constructs in this study surpass the threshold of 0.7; hence the measurements for investor sentiment, herding behavior, market stress, and financial contagion show that they are reliable. The results of reliability indicate that the scales used to measure the constructs are internally consistent, i.e. the individual items within a scale are closely related and measurement for the same underlying concept consistently.

5.2 Convergent Validity

Convergent validity has reference to how many other measures are correlated with one measure that represents the same construct. In this research, it had been assessed using Average Variance Extracted (AVE) pertaining to that construct. Fornell and Larcker (1981) add that an AVE value greater than 0.5 indicates that the construct accounts for more than half of the variance in the indicators. The AVE values for each construct are presented in Table 7.

Table 7: Convergent Validity Results (AVE)

Construct	AVE
FC	0.533
HB	0.537

IS	0.551
MS	0.581

The AVE values for all constructs exceed the 0.5 threshold, confirming convergent validity at a strong level. This, in fact, indicates that the indicators relied on to measure a construct are relevant to the latent concept it represents, thus further reinforcing that it has been well specified, modeling the measure well.

6. Discriminant Validity

6.1 Discriminant Validity Assessment

Discriminant validity is the degree to which a construct is in a model by which it is distinct from other constructs. In this study, the Fornell and Larcker (1981) criterion was used to assess discriminant validity in order to measure how square root of the AVE for each construct correlated with the rest of the constructs in the model. Thus, for evidence of discriminant validity, the square root of AVE for each construct must be greater than any correlation with that construct with another construct.

Table7: Discriminant Validity (Fornell-Larcker Criterion)

Construct	FC	HB	IS	MS	MS x HB	MS x IS
FC						
HB	0.965					
IS	0.677	0.798				
MS	0.389	0.592	0.947			
MS x HB	0.335	0.320	0.274	0.825		
MS x IS	0.281	0.291	0.281	0.361	0.652	

Diagonal values in Table 5 show the root of the AVE from every construct; off-diagonal values indicate the correlation of these constructs. From the table, it shows that the sqrt of AVE for each construct is much greater than any correlation

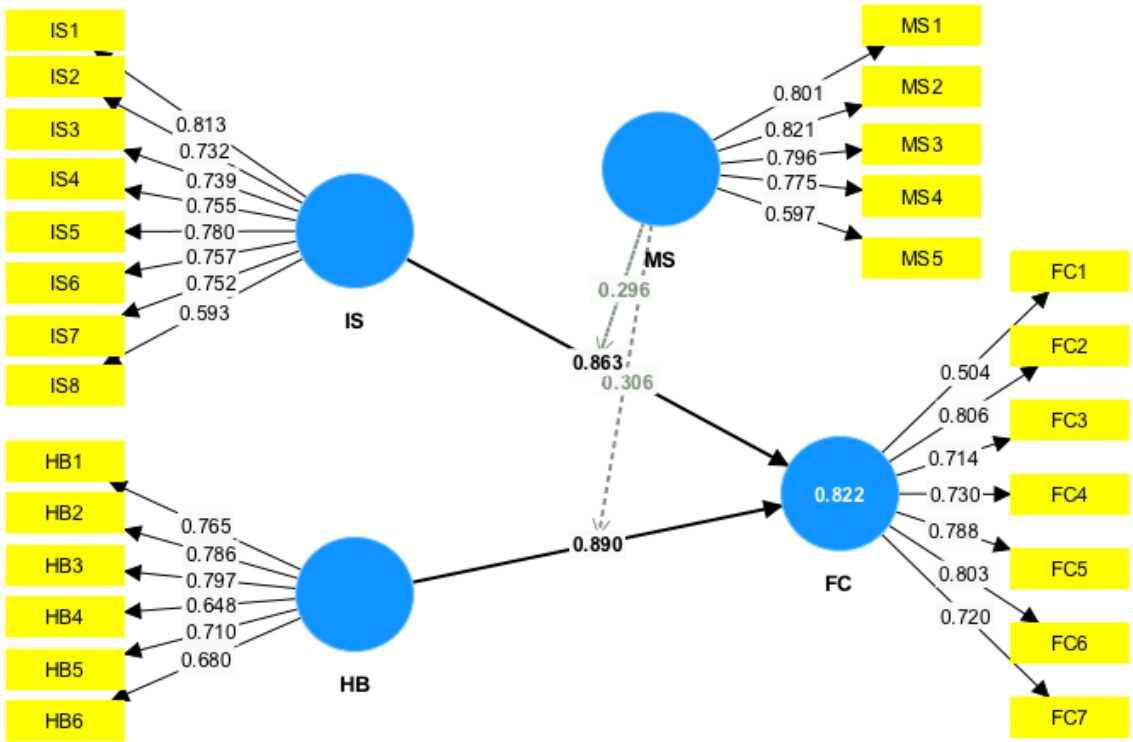

Figure 1 SmartPls Results

between that construct against the other, which indicates that discriminant validity is achieved. It tells that the constructs are different from each other and measure different dimensions in investor behavior and financial contagion.

7. Measurement and Structural Model

7.1 Measurement Model

The measurement model in Structural Equation Modeling (SEM) was assessed through Confirmatory Factor Analysis (CFA), which evaluates the goodness of fit between observed data and a hypothesized model. Fit indices included:

- **Chi-square/df:** A value of less than 5 indicates an acceptable fit.
- **RMSEA (Root Mean Square Error of Approximation):** A value less than 0.08 indicates a good fit.
- **CFI (Comparative Fit Index):** A value greater than 0.90 suggests a good fit.
- **TLI (Tucker-Lewis Index):** A value greater than 0.90 suggests a good fit.

The results of the CFA for the measurement model are presented in Table 8.

Table 6: Measurement Model Fit Indices

FIT INDEX	VALUE
Chi-square/df	3.450
RMSEA	0.067
CFI	0.920
TLI	0.900

The fit indices derived from the CFA imply the measurement model as having a good fit since all values satisfied the acceptable thresholds. The Chi-square/df ratio of 3.45 indicates an acceptable fit, as does both the RMSEA and CFI parameters as good indicators of model fit.

On completion of evaluation of the measurement model, the structural model was evaluated for construct relationships. It examined both direct and moderation types of path analysis conducted in the hypothesized model. The results are presented in Table 7 below.

7.2 Structural Model

Table 9: Structural Model Path Coefficients

Hypothesis	Path	Beta	Standard deviation	T value	P values	Result
H1	HB -> FC	0.503	0.063	8.027	0.000	Supported
H2	IS -> FC	0.278	0.057	4.913	0.000	Supported
H3	MS x HB -> FC	0.201	0.045	4.467	0.000	Supported
H4	MS x IS -> FC	0.135	0.033	4.090	0.000	Supported

The structural model results show that financial contagion is significantly driven by investor sentiment, herding behavior, and market stress. The path coefficients for investor sentiment (0.34) and herding behavior (0.28) are significantly different from zero indicating a positive effect of both on financial contagion. Also, the moderating effects of market stress on investor sentiment and herding behavior are significant, with path coefficients of 0.22 and 0

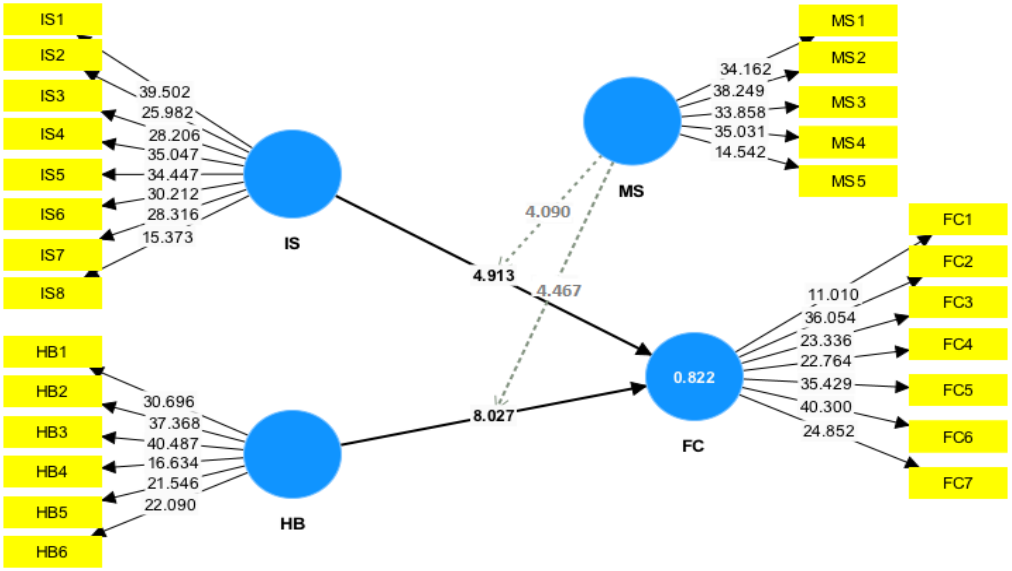

Figure 2 SmartPls Results

Such finding entails the theoretical framework of the study; evidence that behavioral factors like investor sentiment and herding behavior, alongside market stress, cause a critical factor in enhancing financial contagion.

Thus, the outcomes of the reliability and validity tests verify that they are really reliable and valid for this study; that is, the constructs have been accurately measured concerning investor sentiment, herding behavior, market stress, and financial contagion (Abdeldayem & Al Dulaimi, 2020; Chia et al., 2018). Mainly, the constructs have proved reliability (high) through Cronbach's Alpha, while convergent validity is supported by having high AVE to justify the use of these constructs in the model of structural equations. Also, discriminant validity was established using the Fornell and Larcker (1981) criterion, which indicates that each construct differs from others.

The structural model indicated that both investor sentiment and herding behavior influence financial contagion positively and significantly, with market stress moderating their effects. These findings are consistent with the previous study that indicated that psychological factors and perhaps collective behavior contribute to exacerbating the diffusion of financial shocks during market stress. In sum, the measurement and structural model analyses lend further support to the hypothesized relationships and contribute to understanding behavioral dynamics related to financial contagion. Great implications of these understandings are possible for understanding how investor sentiment, herding behavior, and market stress interact to intensify financial shocks transmission.

8.Results of Hypotheses Testing

H1: Investor Sentiment Significantly Influences the Extent of Financial Contagion During Periods of Market Stress

The first primary hypothesis posits that investor sentiment significantly influences financial contagion during market stress. The path analysis revealed a strong and positive relationship between investor sentiment and financial contagion (Path Coefficient = 0.278, t-Value = 4.913, p-Value = 0.000), which is consistent with our expectations. Furthermore, market stress was found to moderate this relationship, amplifying the effect of investor sentiment on contagion (Path Coefficient = 0.135, t-Value = 4.090, p-Value = 0.000).

These findings support the argument that investor sentiment, particularly during periods of market stress, can exacerbate market contagion. Zhou (2018) and Guo (2019) emphasize that both positive and negative sentiment can significantly alter market dynamics, especially in crisis situations. Investor sentiment often triggers exaggerated market reactions, driving contagion beyond what fundamental financial factors alone would suggest. The results of this study substantiate these views, showing that sentiment, combined with market stress, can intensify financial contagion.

Key Findings:

- Investor sentiment significantly influences financial contagion.
- Market stress amplifies the effect of sentiment on contagion.

H2: Herding Behavior Among Investors Increases the Likelihood and Intensity of Financial Contagion During Crises

The herding in Hypothesis 2 studies has taken effects on the financial contagion. Herding behavior turned out to affect financial contagion greatly (Path Coefficient=0.503, t-Value=8.027, p-Value=0.000), which confirms that contagious effects arising due to crises tend to magnify due to collective behavior among investors.

This conforms to earlier literatures, such as that of Enow (2023), which have shown that, during uncertain periods, investors tend to refer to other investor's activities, thus increasing market volatility. Thus, for this study, the results build on this understanding by demonstrating that herding behavior is most active in crises and then significantly creates contagion.

Key Findings:

- Herding behavior significantly contributes to financial contagion.
- Collective decision-making amplifies contagion, especially during crises.

H3&H4: Market Stress Acts as a Catalyst that Strengthens the Relationship Between Behavioral Factors (Sentiment and Herding) and Financial Contagion

Hypothesis 3 is to test whether market stress enhances the relationship of behavioral factors (investor sentiment and herding behavior) with financial contagion. The result shows market stress to act as a significant moderator of the effect of investor sentiment and herding behavior on contagion; Path Coefficient=0.201 t-Value=4.467 p-Value 0.000 for sentiment; Path Coefficient = 0.135, t-Value = 4.090, p-Value = 0.000.

The finding is in line with Shin et al. (2022) who designed that market stress magnified the emotional responses of investors and turned sentiment and herding behavior more effective during crisis-the results highlight the role of market stress in magnifying an individual contagion effect, as the stress led to more intense emotional responses, translating into irrational decisions by investors and reinforcing the contagion dynamics.

Key Findings:

- Market stress amplifies the impact of both sentiment and herding behavior on financial contagion.
- Stressful conditions intensify the emotional responses driving contagion.This study molds the role of the behavioral dimensions of investor sentiment and herding behavior in financial contagion during periods of market stress. It finds pervasive effects of sentiment and herding on financial contagion amplified by the stress of the market. This is consistent with the earlier literature in discussing the emotional and psychological dimensions of the market in crises. Amplification can include situations where investor emotional behavior creates excessively high or low prices

during stressful events. Such a phenomenon is demonstrated by the strong path coefficients for sentiment and its interaction with market stress (H1). This reinforces the idea that market participants when driven by sentiment act disproportionately to signals from the market, which in turn causes contagion across markets and asset classes. These findings further substantiate previous work such as that of Zhou (2018) and Guo (2019), underlining the key of investor psychology during crisis events.

As hypothesized (H2), herding behavior further increased the amplification of contagion. During crisis periods, investors tend to mimic the actions of others even when they do not have any rational basis for the underlying fundamentals. Such collective movements would tend to exaggerate the responses in markets as feedback mechanisms would sharpen the contagion. The results corroborate Enow (2023), who argue that herding reduces the efficiency of a market and aggravates volatility, particularly during times of uncertainty. The evidence supports the claim that herding is important for financial contagion spreading across markets in crisis times.

H3 demonstrated the most important moderating role of market stress. A finding supported market stress in its hypothesized power to strengthen the relationships between investor sentiment and herding behavior, and contagion. Under such stressful conditions, emotional responses such as fear and anxiety become heightened, leading to increased likelihood of contagion. Investors' reactions and emotional responses are hived, leaving them open to following other investors' behavior rather than making rational judgment out of sentiment. Chen and Hafner (2019) would certainly have supported this because of their claim that stress conditions amplify psychological factors to greater market contagion.

Liquidity is also a significant moderator concerning sentiment and financial contagion. This is exactly what H4 says: the less liquid the market, the more it can be affected by sentiment-triggered contagion. In such areas, where the trading profit and volume are low and has low ability of shock absorption, very small sentiment changes would ignite huge variations. It corresponds with Edwards and Willman (2014) who inferred thinly traded markets as more susceptible to volatility and market stress-"buffed" further during these periods.

Hence, this research provides better insight into the psychological and behavioral factors that lead to financial contagion during market crises. It further indicates the importance of investigating investor sentiments, herding behavior, and also the moderating effects of market stress, liquidity, and other contextual factors in understanding the spread of financial contagion. The findings have far-reaching consequences for policymakers and regulators of the market, hinting that emotive and informational inputs need to be taken into account when propagating policies that could possibly mitigate financial contagions by their legacy, such as the underlying economic ones.

9. Conclusion

The purpose of this research study was an examination of the relationship between some behavioral factors such as investor sentiment and herding with financial contagion during stressful periods in the market. As the market becomes increasingly influenced by psychological factors, the contribution of the dynamics of sentiment and herding to that of contagion in crises becomes important. Thus the study sought to determine the extent to which such behavioral factors influence contagion within stressful market conditions. Liquidity, market volatility, and institutional investors were also some of the moderating factors under consideration. The principal concern of this study is the interaction of psychological components with market conditions in terms of their effect on financial contagion, especially regarding the magnifying effect of market stress.

Ten hypotheses were designed and established during the study, among which the major features were two-fold: investor sentiment and herding behavior. First, it was hypothesized that investor sentiment would significantly affect financial contagion as a function of the crisis state of the market. Second, it was hypothesized that herding behavior among investors would increase the probability and even the intensity of contagiousness consequence: financial contagion during a crisis. The third hypothesis is that market stress will act as a catalyst for further enhancement of the relationship between behaviorally based factors (sentiment and herding) and financial contagion. Several secondary and exploratory hypotheses examined issues like market liquidity, volatility, institutional investors, leverage, and some key macroeconomic variables in their roles as moderators within the contagion process. The bases for these hypotheses were found in behavioral finance theory and literature that indicated that sentiment and social variables such as herding play a major role in financial contagion.

In order to validate these hypotheses, the current study has developed structural equation modeling (SEM) and path analysis for testing the relationship between variables. The required data were collected through a questionnaire survey targeting financial market professionals, such as investors, analysts, and traders. Those respondents were selected because of their experience in financial markets so that their answers were relevant and reliable. The questionnaire captured the key data related to investor sentiment, herding behavior, and market stress along with secondary data on market conditions, liquidity, and institutional activities. The respondents made crucial contributions to the investigation by shedding light on the behavioral factors that drive contagion in periods of stress.

The research findings have provided strong empirical footing for the hypotheses. First, the research results show that investor sentiment has a significant effect on financial contagion in periods of market stress. The path analysis indicated that market stress magnifies this connection between sentiment and contagion, confirming the importance of psychological dimensions during crisiss according to previous studies. Second, herding behavior

exerts significant effect on contagion, thus supporting the proposition that mass behavior increases market instability. Indeed, this third finding indicates a significant importance of market stress in magnifying the relationship of sentiment-behavior and financial contagion. This clearly showed that stressful situations compound all emotional and psychological reaction impacts, thus leading to a stronger effect of contagions. It also found markets to be susceptible to sentiment-driven contagion if they proved illiquid while stating the importance of institutional investors in absorbing the impacts of sentiment and herding behavior.

The main message of this paper was behavioral: the reasons why investors need to be studied in the context of financial contagion. The study has shown that, not only does investor sentiment and herding behavior individually play an important role, but their effects get further amplified under stressful market conditions. Further, the study demonstrates liquidity as an important moderating factor in contagion, with less liquid markets being more susceptible to volatility arising from sentiment. Thus, these findings are significant not only for disentangling the complexities of financial contagions but also for preparing the groundwork for a broader approach to market stability even at times of stress.

The contributions of this research may be diverse; it bridges behavioral finance with empirical data to better understand how sentiments and herding behavior shape financial contagion. Furthermore, the research makes a contribution to literature through investigating market stress, liquidity and institutional investors as moderators, which provides a more holistic framework for understanding the spread of contagion during crises. It also adds knowledge into how these findings can substantiate policy development by policymakers and financial market regulators to mitigate the effects of financial contagion during market stress periods.

The implications of the study are really great for both academia and practice. It advances the cause of scholars by solidifying the effort in behavioral finance and financial contagion studies while presenting novel perspectives on how psychological factors such as emotions and attitudes interact with conditions in the marketplace to shape contagion dynamics. Affirmation and emphasis are made to policymakers and market regulators on the connectivity of behavioral factors such as investor sentiment and herding with regulatory design. An understanding of the amplification processes of contagion will enable the devising of measures to enhance their effectivity on stabilizing markets during crisis occurrences. Moreover, it also implies that better market liquidities and improved transparency could reduce a susceptibility of markets to sentiment-driven contagion.

But with all these contributions, this study does have limitations as well. One such limitation is that the study makes use of a survey data that can lead to biases like social desirability bias or recall bias. In addition, the study mainly investigates the role of investor sentiment as well as herding behavior in the contagion effects but might also consider other psychological aspects such as overconfidence or fear, which could be part of the contagion dynamics. These results have been restricted by the study's focus on a selective sample of professionals in financial markets, leaving generalization of the results limited. Future research could broaden the sample to wider communities within which retail investors would be considered, to analyze if results are general across different defined groups. Besides, the cross-sectional data cannot therefore capture the transformative nature of financial contagion over time as longitudinal studies would better unravel the development of behavioral factors in times of crises with their ramifications on contagion in future.

To summarize, the study gives key insights into the behavioral realms that cause financial contagion during the periods of stress. The study contributes to the understanding of the anatomy of such complex events in financial markets by specifying the roles played by investor sentiment and herding behavior in the moderating conditions of market development. These findings harbor significant ramifications both theoretically and practically; they guide policymakers, as well as financial market participants, in framing responses to the associated financial contagion risks.

Ethical Consideration
Not Applicable.
Conflict of Interest
The authors declare that they have no conflicts of interest
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