# Determinants of Investment Decision Making among Malaysians during COVID-19 Pandemic

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***Abstract:*** **Previous studies show that people tend to be irrational when making investment decisions. In addition, the impact of the COVID-19 pandemic on the global economy has been substantial and investment decision making during this period would be diverse. This research attempts to identify the determinants of investment decisions in Malaysia during the COVID-19 pandemic based on behaviour finance attributes, specifically the self-control, loss aversion, anchoring and herding. This research adopts a mixed method design. The quantitative research uses questionnaire survey to analyse the results of 213 respondents in Malaysia, whilst in the quantitative research, interviews are used to identify the responses of 10 interviewees. The results show that loss aversion and anchoring have significant influence on the investment decisions of Malaysians, while self-control and herding have no significant influence on the investment decisions of Malaysians during the current pandemic. Thestudy provides an insight on Malaysians' investment decision making in relation to the concept of behavioural finance during the COVID-19 pandemic and economy turmoil, which contributes positively to the national economy.**

***Keywords:*** **Investment Decision Making, Behavioural Finance**

## I.INTRODUCTION

The success or failure of an investment depends on the investment decision made by the investor. However, there are many determinants that can affect investment decisions. Investors must make favourable investment decisions and choose the right investment strategies. Since, everyone has different thoughts and emotions when making decision, they will have different ideas of making investment decisions. Even if two investors are equally educated, they may have different views when making investment decisions.

Kahneman, Knetsch, and Thaler (1991) find that psychological factor has a direct impact on investment decisions. They believe that the introduction of behavioural finance into the emotional characteristics of investors in decision-making is a supplement and improvement to the traditional financial theory. However, traditional financial theory holds that investors can rationally make optimal investment decisions and find out the maximum expected utility. These rational investors are supposed to make rational choices without making mistakes. In fact, investors usually base on their own ideas, market fluctuations, trends to make predictions and psychological evaluation to make investment decision. Investors' decisions are not only influenced by their ideological mood or educational background, but also by major social or market events. However, the psychological biases of human beings in making investment decisions include heuristic biases, cognitive biases, and emotional factors in behavioural finance (Tversky and Kahneman, 1974). Behavioural finance helps investors realize that everyone is prone to bias and error. It also helps them improve their performance when making investment decisions. The main purpose of this study is to explore the influence of psychological factors, self-control, loss aversion, anchoring and herding on investment decisions during COVID-19 pandemic based on behavioural finance.

Studies have shown that Malaysians' participation in investment activities is positive and more people will enter the market in the future. This will not only contribute to the implementation of investment incentives developed by governments and regulatory authorities, such as investment tax subsidies, education or training incentives, development of information and communication technologies and improvement of laws to promote investment growth. Similarly, there will be new investors in the market, and there will be experienced investors. These investors are influenced by external circumstances. For example, politics, law, and economics. It is very challenging for investors to make informed decisions about their investments. In addition, investors' investment decisions are influenced by behavioural factors, which means the way individual investors interpret and adapt to the information provided by the market or their environment. This is because investors will make irrational judgments according to their own ideas, leading to the increase of investment risks and potential losses.

With the global impact of COVID-19 pandemic, Malaysians and businesses are facing an economic crisis because of the movement restriction order imposed by the government to prevent the spread of virus. Therefore, this sudden economic shock event would bring fear to Malaysians and increase uncertainty to the economy. In this situation, some investors will be willing to reduce their risk exposure, while others will use the opportunity to enter the investment market or take new positions. Therefore, a better understanding of the determinants that influence investment decisions is helpful for individual investors to make decisions.

The main objective of this study is to analyse the impact of behavioural finance biases towardsinvestors' investment decisions making during COVID-19 pandemic. The specific objectives are as follow:

1. To identify the relationship between self-control and an individual's investment decisions in Malaysiaduring COVID-19 pandemic.
2. To analyse the relationship between anchoring and individual investment decisions in Malaysiaduring COVID-19 pandemic.
3. To measure the relationship between loss aversion and an individual's investment decisions in Malaysiaduring COVID-19 pandemic.
4. To examine the relationship between herding the relationship between self-control and individual investment decisions in Malaysiaduring COVID-19 pandemic.

Armed with this information, it will be possible to make more informed decisions about investors who will enter the market. Furthermore, making investors aware of other factors that may affect their investment decisions and improve their awareness of their financial behaviour when making investment decisions. This research will benefit individual investors, and investment advisers or financial institutions, policy makers, such as governments or financial market regulators, and companies. As a result, investors are not always able to make rational decisions and markets are not always efficient. Therefore, when investors' financial behaviourmaking mistake, this research helps them by providing a better recommendation, and the overall stock market can function efficiently and smoothly.

## II.THEORETICAL AND LITERATURE REVIEW

### *2.1 The Behavioral Finance Theory*

Investors' financial behaviour is based on intellectual models which include psychological, sociological, and financial factors. In other words, investment decisions are based on intuition and emotions, not rationality. Behavioural finance recognizes that it directly influences investors' decisions and helps examine any buying and selling behaviour of individual investors (UsluDivanoğlu and Bağci, 2018). Therefore, behavioural finance has been widely used to study the inevitable psychological and sociological factors that directly affect investors' rational financial decisions and lead to poor investment performance (Ricciardi and Simon, 2000). Behavioural finance helps investors recognize that everyone is prone to biases and errors due to psychological biases. These psychological biases include heuristic biases, cognitive biases, and emotional factors. Heuristic bias refers to investors that only rely on their own experience to deal with problems, often leading to errors in judgment. In behavioural finance, it includes availability, representativeness, anchoring, and overconfidence. Behavioural factors may also influence the framing effect of individual decision making. This means that the decisions investors make during periods of uncertainty may be influenced by the framework they use. Therefore, when the problem frame model is different, or the framework chosen by the investor is different, the result will be different. Several psychological effects that influence the decision-making process of investors, such as loss aversion, regret aversion, mental accounting, and self-control effects, can be classified as frame-dependent bias. However, some less common behavioural biases include herd bias, disposition effect, and status quo bias that have only been studied by a handful of researchers. These behavioural biases can help investors understand how to minimize investment risk and make better investment decisions.

### *2.2 Investment decisions during financial crisis*

Investment decisions made by individuals are affected by various factors, there are the types of risk preferences, financial markets, different types of products, personal financial conditions, etc.Elements that influence investors' stock market decisions include price fluctuations, market and political uncertainties, and internal organizational factors (Waweru, Munyoki, and Uliana, 2008). Research has shown that investor psychology has a lasting impact on trading and risk-taking behaviours (Barber and Odean, 2000). However, events such as the 2008-2009 financial crisis can have a strong impact on individual investors because of their prominence (Kahneman and Tversky, 1972). In traditional finance, investors are supposed to be rational. In behavioral finance, Statman (2011) believes that investors' investment decisions are essentially determined by investors' demands. As a result, investors' rationality is limited, and they make mistakes occasionally.

Moreover, the COVID-19 pandemic has undermined investor confidence, causing some pressure on venture capital. This kind of sudden dramatic experiences, such as the COVID-19 pandemic or even the Great Depression of the 1930s, would have some permanent impacts on investor perceptions and risk-taking (Malmendier and Nagel, 2011). The financial crisis took place in an uncertain and unstable market environment, with unexpected negative shocks to investors' wealth and returns. Therefore, a series of crises leading to losses will reduce investors' willingness to take subsequent risks (Barberis, 2011; Lim, Teoh and Lee, 2021). However, Agnew and Szykman (2005) find that some individual investors would choose trading activities during the crisis. Investors are subjected to an unusually large amount of dramatic and unexpected news (Dzielinski, 2011). This information greatly influences the behaviours of investors (Ackert, Jiang, Lee, and Liu, 2016). Therefore, this study examines four behavioural biases (self-control, loss aversion, anchoring and herding) that would influence investment decisions made by the Malaysian investors during the COVID-19 pandemic.

### *2.3 Self-control*

Self-control is not only used in daily choices, but also in managing personal's finances. Self-control can be expressed by willpower. A person with a strong willpower means his self-control ability is also strong. Pompian(2007) argues that the weakness of individual willpower encourages individuals to consume today by saving for tomorrow. Choi, Laibson, and Madrian(2011) find that people with low self-control are less

likely to save enough money for retirement before retirement. Weak individual willpower will affect self-control, which may lead to bias in self-control when making investment decisions. However, lack of self-control can lead to decisions that are incompatible with an individual's long-term success, such as addictive behaviour, inadequate savings, and procrastination (Bucciol, Houser & Piovesan, 2010). In addition, Ang, Kong, Ong, Poo, and Tan (2019) states that when investors make investment decisions by buying or selling stocks, bonds, futures contracts, foreign exchange trading or other financial products that may increase personal wealth or improve the quality of future retirement, they are more likely to be unaware of their investment decisions making. If a person lacksself-control, he will fail to accumulate wealth and achieve his financial goals. This study points to a link between wealth accumulation and self-control (Ameriks, Caplin, Leahy,& Tyler, 2007). Therefore, the first hypothesis is proposed as follow:

$H_1$: There is a positive significant relationship between self-control and investment decision making among Malaysians during the COVID-19 pandemic.

*2.4 Loss Aversion*

Loss aversion refers to the preference of people to avoid losses rather than to gain profits (Kahneman, Knetsch,& Thaler, 1991). This means that the psychological effect of objective loss is greater than the psychological effect of equal benefits, and this phenomenon is called loss aversion. The research of Nada (2013) shows that the psychological ability of investors to bear losses is twice of their gains. Therefore, if individual investors are loss averse, they would be disinclined to bear losses and may even take greater risks to avoid losses (Shefrin, 2003). Kahneman, Knetsc, and Thaler (1991) suggest that individuals with loss aversion tend to behave more irrationally when making decisions. On the other hand, Bashir, Javed, Usman, Meer, and Naseem (2013) indicate that when face with losses, investors may continue to invest in stocks and choose not to sell, to minimize the losses in the stock market. Luong and Ha(2011)'s research on behavioural factors affecting individual investors' decision-making and performance shows that loss aversion bias has moderate impact on investment decisions but has a negative impact on investment performance. Nonetheless, Arno, Parker, and Terry(2010) reveal that loss aversion has a significant negative impact on the investment decision of risky assets. Accordingly, a second hypothesis is developed:

$H_2$: There is a positive significant relationship between the loss aversion and investment decision making among Malaysians during the COVID-19 pandemic.

*2.5 Anchoring Bias*

Anchoring bias occurs when people rely too much on available relevant information when making decision, or they only trust the first piece of information they receive. Cen, Hilary, and Wei (2011) state that even financial experts are affected by the anchoring effect in their decisions. Ngoc (2013) believes that some investors use information from the company's history to estimate the stock price but using historical information to predict the value of the situation will lead to insufficient information. Babajide and Adetiloye (2012) argue that anchoring behaviour has an important relationship with investors' investment decisions. However, their research of Babajide and Adetiloye (2012) find that anchoring in Nigeria is accepted but the alternative hypothesis is rejected. In contrast, Subash (2012) states that empirical investors tend to make judgments by searching for new information, so they rarely rely on past information to estimate their expected investment returns. According to the research of Megan, Queeny, Tan, Teh and Wong (2016), investors' decisions before investing in stocks are most influenced by past performance. Furthermore, Liao, Chou and Chiu (2013) show that a stock has underperformed in the past does not mean that it will not perform well in the future. Even experienced investors "anchor" past performance when considering decisions to buy or sell stocks today. But a stock does not always stick to losses; it follows random movements. Therefore, a third hypothesis is proposed to test this effect:

$H_3$: There is a positive significant relationship between the anchoring and investment decision making among Malaysians during the COVID-19 pandemic.

*2.6 Herding*

Herding is when investors imitate others, buy and sell to follow the act of others, own what others own, including the decisions they make. Alquraan, Alqisie and Shorafa (2016) suppose that investors with herding behaviour may not think and plan ahead when making investment decisions. Ghalandari and Ghahremanpour (2013) find significant positive correlation between herd behaviour and individual investment decisions. They point out that compared with young investors, the experienced investors are less affected by herding behaviour. This is due to the experienced investors make investment decisions based on their accumulated experience and knowledge, instead of following the decisions of majority of people, without unreasonable thinking and planning. Conversely, Anum and Ameer (2017) state that investors make investment strategies according to some changes in public opinion, but this decision does not necessarily mean that theirinvestment lose money; yet there are also investors who are confident with their investment decision and not to be influenced by herding behaviour. Goodfellow, Bohl and Gebka(2009) claim that the more confident an investor, the less interested he is in herd behaviours. Ngoc(2013) finds a moderate relationship between herding behaviours and investors' investment decisions in his research. Consequently, a fourth hypothesis is developed:

$H_4$: There is a positive significant relationship between herding and investment decision making among Malaysians during the COVID-19 pandemic.

*Research Framework*

The following research framework is designed to examine the determinants that influence the investment decisions of Malaysian investors in this study. Investors' self-control, anchoring, and loss aversion bias, and herding are the independent variables. The figure below shows the relationship between independent and dependent variables.

Independent Variable Dependent Variables

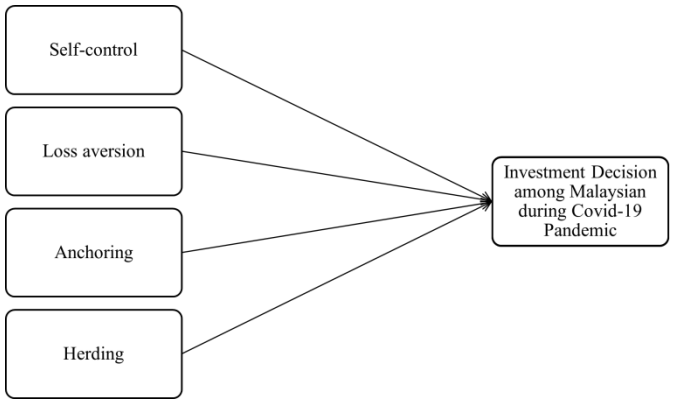


Figure 1: Research Framework

## III.METHODOLOGY

In this study, primary data is used. Themixed methodsdesign approach isapplied. The combination of qualitative and quantitative methods approach offers more comprehensive findings, enhancing the ability to generate the increased validity and confidence in results, and hence facilitatinga more discerning understanding of the findings (Johnson and Christensen, 2004; Molina-Azorin, 2012).Hence, theresearch design includes two phases: the first phase is the analysis of the quantitative data; whilst the second phase is the evaluation of the qualitative data. Quantitative research method conducts objective measurement and numerical analysis of the data collected from questionnaires, while the results of qualitative research supplement further comprehensive understanding of the research problem that quantitative data cannot attains (Creswell and Plano Clark, 2011). Thus, combining these two approaches provides a deeper understanding of the determinants (self-control, anchoring, loss aversion and herding) of investment decisions among Malaysian during the COVID-19 pandemic.

*Measurements*

The investment decision is examined using five items adapted from Queenyet.al. (2016) and Ang et. al. (2019). To explore self-control factor, we adapt three items from Nada (2013),and two from Ang et.al (2019)to evaluate the Malaysian respondents' self-control. Loss aversion factor is researched using five items adapted from the study by Nada (2013).The anchoring factor,two itemsare adapted from Nada (2013), one item from Megan et. al.(2016), one fromAng et.al (2019). Five items measuring herding factorare adapted from Megan et.al. (2016), and Ang et.al. (2019). The details are provided in Table1.

Table 1: Sources of Questionnaire

| No. | Factor | Questions | Reference List |
|---|---|---|---|
| 1.1 | Self-control | I would invest the stock based on my economic capability. | Ang et.al. (2019) |
| 1.2 | | I would not overspend on investment. | |
| 1.3 | | I care about spending on my daily obligations more than caring about saving for the future. | Nada (2013) |
| 1.4 | | I divide my money to capital for investment and money for daily spending. | |
| 1.5 | | If I believe that some details about certain stock are not available to me, I will not buy that stock. | |
| 2.1 | Loss Aversion | I am more concerned about a large loss in my stock than missing a substantial gain. | Nada (2013) |
| 2.2 | | I feel nervous when large paper losses (price drops) have in my invested stocks. | |
| 2.3 | | I will not increase my investment when the market performance is poor. | |
| 2.4 | | I sell stocks that increased in value very quickly. | |
| 2.5 | | When it comes to investment, no loss of capital (invested money) is more important than returns (profits). | |
| 3.1 | Anchoring | Past performance of the stock can influence my decision to buy or sell of the stock today. | Megan et.al. (2016) |
| 3.2 | | I buy stocks that have performed well and avoid stocks that don't perform well in the recent past. | Develop for this study |
| 3.3 | | I rely on company historical financial performance. | Ang et.al. (2019) |
| 3.4 | | I am likely to sell my stock after the price hits recent year high | Nada (2013) |
| 3.5 | | I will still hold a blue-chip stock (giant company with strong reputation) even if it is losing now | Develop for this study |
| 4.1 | Herding | I tend to track other investors' investment strategies and apply in my investment for stock selection. | Megan et.al. (2016) |
| 4.2 | | Other investors' decision will be taken as an important source of information. | |
| 4.3 | | I choose the stock that been chosen by huge numbers of investors. | Ang et.al. (2019) |
| 4.4 | | I invest because my close family and friends had involved in investment activities. | Megan et.al. (2016) |
| 4.5 | | Other investors' decisions of buying and selling stocks have an impact on my investment decisions. | Develop for this study |

| | | | |
|---|---|---|---|
| 5.1 | Investment Decision Making | I will sell off the stock immediately once I have gained the profit from that stock. | Megan et.al. (2016) |
| 5.2 | | The amounts I invest depend on stock performance. | Ang et.al. (2019) |
| 5.3 | | I will invest in assets which has higher risk but expecting higher return. | Develop for this study |
| 5.4 | | I prefer a 50% chance of a RM 2500 loss versus a certain loss of RM1000 from an investment. | Megan et.al. (2016) |
| 5.5 | | My investment decision influence by own behavior. | Ang et.al. (2019) |

*Data Collection Methods*

The target population of this study includes the survey of potential and existing individual investors in Malaysia. Questionnaire survey is used to collect information in quantitative research design. The questionnaire consists of 25 closed-ended questions, which are assessed using a 5-point Likert scale, ranging from 1 "strongly disagree" to 5 "strongly agree" (Saunders et al. 2009). The target sample size of this study is 250 Malaysian respondents. Non-probabilistic sampling is used, which savetime and being cost effective. Questionnaires using Google forms and links of the survey are sent out via social media and emails. 213 responses are received.

On the other hand, personal interviews are arranged for the qualitative data collection. Semi-structured interview with open-ended questions related to the topic is designed (appendix A). We first determine the types of participants to participate in our research and the informationneeded. The target population of qualitative research is Malaysians, who arethe potential and the existing individual investors. Since interviews need to be conducted one-by-one, our sample size is 10 respondents. Interviews are conducted byphone call, and the conversations are recorded, transcribed, and analysed.

Data collected are checked, cleaned, encoded, and finally transcribed to the meaningful information. In the quantitative study, the data collected from the survey are processed and analysed using Social Scientist Statistical Package (SPSS) software. Descriptive statistics, Cronbach's Alpha test, Spearman's rank correlation coefficient, and multiple regression analysis are performed to obtain the results.

In the qualitative research, thematic analysis is used to analyse data and examine interview transcripts. Each participant's interview is recorded and transcribed into text data at the end of the interview which eases to generate patterns and themes for the final survey results.

In order to ensure the reliability of the quantitative study, a preliminary study is conducted on a small number of subjects, with a total of 30 respondents participate in the pilot test. According to Wells and Wollack (2003), the closer the alpha value is to 1, the higher the correlation between the items in the questionnaire, specifically, a standard value of alpha need to be greater than 0.6 before proceeding. In this research, we obtain a Cronbach's alpha of 0.774. Therefore, the reliability test is fulfilled for further quantitative analysis.

## IV.DATA ANALYSIS

*4.1 Descriptive Analysis*

Table 2 shows the demographic profile of the respondents. There area total of 213 respondents, 65.7% male and 34.3% female. In terms of age group, most respondents are between 21 and 30 years old (117 respondents/ 54.9%); 18.8% of respondents aged 31-40; 14.6% of those aged between 41 to 50; 7% of them aged under 20, 4.2% of them aged 51 - 60 and only 0.5% of those aged above 60. In terms of ethnicity, 74.6% are Chinese, Malay 16%, the remaining of 9.4% are Indians. Most of the respondents are currently employed. Of the 213 employed respondents, 4.7% are self-employed, 53.1% are employed. Students account for 31.5% of the total, housewife at 7.5%, and the remaining 3.3% includes retired and unemployed workers. In terms of the education level, most respondents (43.2%) are undergraduate, 30% of respondents are diploma graduates, 21.6% of themare secondary school level; 1.4% at primary education; and 3.8% of which have master's degree or higher education. In terms of monthly income, 31.92% of respondents has a monthly income of RM1,000 or less. 28.64% of the respondents has an income range of RM1,001 - RM3,000, 33.8% between RM3,001 - RM5,000, and 5.63% with income range between RM5,001 - RM10,000.

Table.2: Respondents' profile for this study

| Item | Frequency | Percentage (%) |
|---|---|---|
| Gender | | |
| Male | 73 | 34.3 |
| Female | 140 | 65.7 |
| Total | 213 | 100 |
| Age | | |
| 20 and below | 15 | 7 |
| 21-30 years | 117 | 54.9 |
| 31-40 years | 40 | 18.8 |
| 41-50 years | 31 | 14.6 |
| 51-60 years | 9 | 4.2 |
| 61 and above | 1 | 0.5 |
| Total | 213 | 100 |
| Race | | |
| Malay | 34 | 16 |
| Chinese | 159 | 74.6 |
| Indian | 20 | 9.4 |
| Total | 213 | 100 |
| Occupation | | |
| Student | 67 | 31.5 |
| Housewife | 16 | 7.5 |
| Employed | 113 | 53.1 |
| Self Employed | 10 | 4.7 |
| Others | 7 | 3.3 |
| Total | 213 | 100 |
| Highest Education Level of Respondent | | |
| Primary | 3 | 1.4 |
| Secondary | 46 | 21.6 |

| | | |
|---|---|---|
| Diploma | 64 | 30 |
| Bachelor | 92 | 43.2 |
| Master & above | 8 | 3.8 |
| Total | 213 | 100 |
| Monthly Income | | |
| Below RM1,000 | 68 | 31.9 |
| RM1,001-RM3,000 | 61 | 28.6 |
| EM3,001-RM5,000 | 72 | 33.8 |
| RM5,001-RM10,000 | 12 | 5.6 |
| Above RM10,000 | 0 | 0 |
| Total | 213 | 100 |

The survey also considers the types of investment assets the respondents are interested in. The classes of investment asset for the respondents to choose from include bank deposits, stocks, mutual funds, bonds, and insurance policies. Most respondents invest in more than one investment asset at a time. As shown in Table 3 and Figure 2, the most favoured investment assets of respondents are bank deposits and insurance, accounting for 40.3% and 22.3% respectively. This is because bank deposits and insurance are both low-risk investment assets, so they are preferred by the risk averse investors who areless willing to take on risk. However, 21.1% of respondents own stocks, which means thatinvesting in the equity marketis also popular in Malaysia. It could also be due to the fact that some people chose to enter the stock market at a time when stock prices are bearishowing to the pandemic and uncertainty. There are5.8% of respondents who own mutual funds, 3.4% invest in bonds, suggesting bond investmentis less popular. Among them, 7.2% do not have any investment assets at present, but they are fascinated to investment and are potential investors.

Table 3: Respondents' Investment Assets Owned

| Investment Assets Owned | | | | |
|---|---|---|---|---|
| | | Responses | | Percent of Cases (%) |
| | | N | Percent (%) | |
| Investment Assets | Bank deposits | 168 | 40.3 | 78.9 |
| | Shares | 88 | 21.1 | 41.3 |
| | Mutual funds | 24 | 5.8 | 11.3 |
| | Bond | 14 | 3.4 | 6.6 |
| | Insurance policies | 93 | 22.3 | 43.7 |
| | Not own any investment | 30 | 7.2 | 14.1 |
| Total | | 417 | 100 | 195.8 |

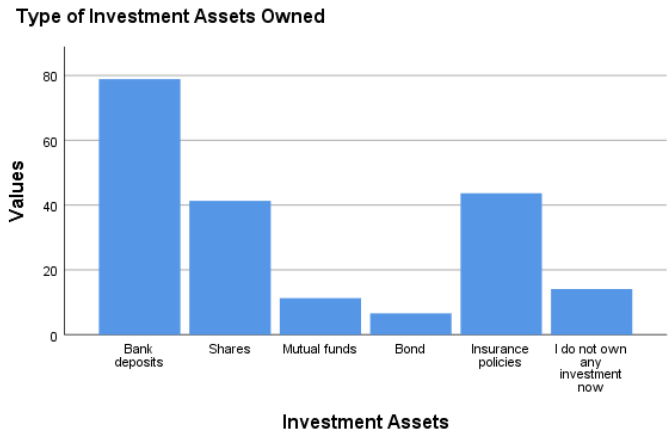


Figure 2: Respondents' Investment Assets Owned

Cronbach's alpha value based on the actual test with 213 respondents was 0.769. An alpha value of 0.7 is an acceptable level for reliability testing (Wells and Wollack, 2003).

*4.2 Multiple Regression Analysis*

This research uses multiple regression analysis to test the impact of the variables on the investor's investment decision. As shown in Table 4, the estimated coefficient of correlation (R-value of 0.603) suggests a relatively high linear correlation between the dependent and independent variables. The coefficient of determinants, the R-square value of 0.363, represents the explanatory ability (36.3%) of the independent variables (self-control, loss aversion, anchoring, and herding behaviour) to the variation of the dependent variable (Malaysians' investment decisions during the COVID-19 pandemic) in our model.Nearly 63.7% of the variation of the investment decisions is due to other variables that are not present in this research which have some influence on the investment decisions of Malaysians during the COVID-19 pandemic. Durbin-Watson statistic values are distributed between 0 and 4. Studies show that Durbin-Watson's test statistics are relatively normal in the range of 1.5 to 2.5, and the closer they are to 2, the more likely they are to be independent of each other (Tabachnick and Fidell, 2001). The D-W value of 1.977 in this study is within the acceptable range. Hence, the observed values of simple linear regression in this study are independent of each other. The low VIF values of 1.170, 1.200, 1.357, 1.398 indicate that the variables are free of the multicollinearity problem. The F statistic is supported at the 1% significance level. Therefore, the model is robust for prediction. Hence, the regression equation is as follows:

Investment decisions of Malaysians during the Covid-19 pandemic = 0.675 + 0.082 self-control + 0.240 loss aversion + 0.398 anchoring + 0.086 herding + ε (1)

*Regression Analysis*

Table 4: Regression Analysis

| Independent Variables | β- stat | t-stat | VIF |
|---|---|---|---|
| Self-Control ($H_{1)}$ | .082 | 1.235 | 1.170 |
| Loss Aversion | .240*** | 4.055 | 1.200 |
| Anchoring | .398*** | 5.942 | 1.357 |
| Herding | .086 | 1.478 | 1.398 |
| R | 0.603 | | |
| R-square | 0.363 | | |
| Adjusted R-square | 0.351 | | |
| Durbin-Watson | 1.977 | | |
| Sig | 0.000*** | | |
| F-value | 29.680 | | |
| *** Significant at 1% level | | | |

The influence of factors namely self-control, loss aversion, anchoring, and herding on investment decisions of Malaysians during the COVID-19 pandemic is shown in Table 4. The standardized coefficients (β), which normalize the constant to zero, are reported in Table 4 as 0.082, 0.240, 0.398 and 0.086.

The largest influence on Malaysians' investment decisions during the COVID-19 pandemic, observe through the standardized coefficients, is the $H_3$ anchoring (β=0.398), significant at 0.000 with the t-value of 5.942. So, the null hypothesis of $H_3$ is rejected. We conclude that there is a positive significant relationship between the anchoring and investment decision making among Malaysian during the COVID-19 pandemic. This finding is consistent with the results from the study of Cen, Hilary, and Wei (2011),Megan et.al. (2016) and Ngoc (2013) who find that people make investment decisions based on past information, or market experiences. However, this is inconsistent with the findings from the studies conducted byNada (2013), Luong and Ha (2011) and Babajide and Adetilove (2012).

Theloss aversion factor is significant at 0.000 (β=0.240) with t-value of 4.055. The finding of this study reflects that loss aversion has a significant positive effect on the investment decision making among Malaysian during the Covid-19 pandemic which in line with the expected hypothesis. This finding is consistent with the results from the study of Anum and Ameer (2017), Arano, Parker, and Terry (2010) and Luong and Ha (2011). Though, this is inconsistent with the findings from the studies conducted by Bashir, Javed, Usman, Meer, and Naseem (2013), Hala, Abdullah, Andayani, Ilyas, and Akob(2020) and Ang et. al. (2019).

On the other hand, $H_1$ self-control ($p > 0.10$) and $H_4$ herding ($p > 0.10$) are not statistically significant at 10% level. Therefore, the null hypotheses of $H_1$ (self-control) and $H_4$ (herding) cannot be rejected. Henceforward, we conclude that there is no significant relationship between self-control and investment decision making among Malaysian during the COVID-19 pandemic ($H_{1)}$; and there is no positive significant relationship between herding and investment decision making among Malaysian during the COVID-19 pandemic ($H_4$).This finding is supported byNada (2013), Madaan and Singh (2019), Konstantin(2016), Chelangat, Symon, and John (2018), Din, Mehmood, Shahzad, Ahmad, Davidyants, and Abu-Rumman (2021) and Megan et. al. (2016) whose research findings are the same as this paper. In contrast, our findings show inconsistent results with the study conducted by prior researcher, Tabassum and Haroon (2015), Pompian (2006), Ang et. al. (2019), Ghalandari and Ghahremanpour (2013), Alquraan, Alqisie, and Shorafa, (2016), Anum and Ameer (2017) and Luong and Ha (2011).The prior researchers arguethat investors who lack self-control would invest both their savings and their emergency funds to achieve higher returns. In addition, investors with herd behaviour would rely more on the advice of others or public investors to make investment decisions and make wrong decisions.

*4.3 Qualitative Analysis*

Table 5: Interviewees' Profile

| Item | Frequency | Percentage (%) |
|---|---|---|
| Gender | | |
| Male (A1, A2, A3, A9, A10) | 5 | 50 |
| Female (A4, A5, A6, A7, A8) | 5 | 50 |
| Total | 10 | 100 |
| Age | | |
| 21 years (A2) | 1 | 10 |
| 22 years (A1, A4, A6, A7, A8, A10) | 6 | 60 |
| 24 years (A5) | 1 | 10 |
| 25 years (A3) | 1 | 10 |
| 26 years (A9) | 1 | 10 |
| Total | 10 | 100 |
| Highest Education Level of Respondent | | |
| Primary | 0 | 0 |
| Secondary | 0 | 0 |
| Diploma | 0 | 0 |
| Bachelor (A1-10) | 10 | 100 |
| Master & above | 0 | 0 |
| Total | 10 | 100 |
| Education Background | | |
| Finance (A2, A5, A6, A7, A8, A10) | 4 | 40 |
| Non-Finance (A1, A3, A4, A9) | 6 | 60 |
| Total | 10 | 100 |

Table 5 shows that the proportion of male and female among the 10 interviewees is 50%. However, all the interviewees are between 21 and 26 years old. Among them, 60% of interviewees are 22 years old. The remaining 40% were interviewees aged 21, 24, 25 and 26. Their highest education is bachelor's degree. However, six of the interviewees having a finance related educational background. The other four were non-finance related.

*4.4 Factors to consider when making an investment decision*

From the interview, we can see that when they make investment decisions, the factors they considered include the economic conditions, risk and return, stock prices, liquidity, capital, and the fundamentals of the company.

At the current state, the global economy is vigorously affected by the COVID-19 pandemic. An interviewee (A1)comments the state of the global economy is his main concern when making investment decisions. This is because globalization leads to the high correlation between various economies. Four respondents (A2, A3, A6 and A8)remark that they analyse the potential companies in their investment list, by analysing companies' financial statements, observe transaction volume, monitoring stock prices, liquidity etc.A healthy cash flow is essential. Respondents note that share prices generally move in line with the companies' fundamental. Another interviewee (A2) views the company's compound annual growth rate is important. Hence, he would not consider a company that has good fundamentals but with a low growth rate. An interviewee (A7), deem herself as a risk averse investor, would not make an investment in high risk securities even if the return of the investment is excessive. Some interviewees (A4, A8 and A10) believe that they would prioritise their own available funds when making investment decisions, and would seek the opinions of their family members, because investment affect family's cashflow.

*Self-Control*

When dealing with whether self-control influences investment decisions, 5 of the 10 respondents agree that self-control would have an impact on investment decision making. Interviewee (A4)states that she would tend to overspend on investments if not practicing self-control. Two interviewees (A2 and A8) mention that they are looking for long-term stable returns rather than short-term shock returns. If without the ability of self-control, they may be holding a gambling mentality for investment, because investment must have a series of strategies and plans to achieve better results. In addition, interviewee (A7)opinions that people with a self-control biased often do not have a proper plan their investments and hence tend to loss all the returns they made from their investments. Likewise, these people do not want to keep their money in a fixed place for a long time where they cannot access or spend them. Interviewee (A5) believes that the self-control attribute made people more rational and be objective when making investment decisions. Since the results of the interview is mixed, we cannot reject the null hypothesis $H_1$ (Self-Control).

*Loss Aversion*

In terms of loss aversion, four respondents (A4, A7, A9 and A10) agree that loss factor has significant impact on the investment decision making. One interviewee (A4) believes that it is possible to avoid losses when making financial decisions, says that she would not choose to invest in high-risk and high-return investments because she is afraid of losing more money in the investment. Another interviewee (A7) states that she is not a risk taker and would worry about losing all the investment fund. She reflects that the investment must be at least breakeven rather than loser. Respondent (A9)deemsbeginners and seasonal investors are loss averse. This is because, he believes that human beings are afraid or uncomfortable with losses, so even temporary losses can make investors feel insecure when making investment decisions.

In addition, interviewee (A7) claims that investment decisions are difficult to form if people are afraid of taking losses, asall types of investment involve a chance of loss. Therefore, when making investment decisions, it is possible to take on the principal of the high-risk investments which relates tothe high return. Moreover, another interviewee (A10), supported that if a person is confident in the investments and have an appropriate stop-loss strategy, he should not avoid the high-risk investments.

On the other hand, two neutral respondents (A2 and A6) comment that they used to worry about losses when they were new to the stock market because they did not have much confidence in their investment analysis and decisions. But over time, his confidence in his own investing decision making enhanced. Another addsthat since investments are conducted over long-term, giving up investment due to lossesswould cause the investorto lose out even more.

Overall, from the comments obtained from the interview on loss aversion, the null hypothesis $H_2$ (loss aversion) is rejected.

*Anchoring*

In the interview on whether the anchoring effect has any impact on their investment decisions, seven of the interviewees (A1, A3, A4, A5, A6, A8 and A10) contend that the anchoring effect would have an impact on investment decisions, whilst, the other three interviewees (A2, A7 and A9), commented otherwise.

Interviewee (A3) states that there is an anchoring effect if people are new to investment or are first timer in the market. Interviewee (A1)opinesthat it is the anchoring bias that put him in a disadvantaged investment state. He believes that the problem is exacerbated when there is a lack of contact or communication with other investors, which is inconsistent with the herding behaviours. He states, "We can't get too close to the market, but we can't get too far away from the market also."

Conversely, the interviewee (A2) emphasises that the current information is not an indicative of future performance because the economy and market condition is constantly changing. Likewise, interviewee (A7) believes that investment decisions should not be made solely on the basis of recent or initial investments.

Therefore, from the qualitative interview, we find evidence that the anchoring effect has an impact on the investment decisions. Hence, the rational investors do not make investment decision solely based on the initial information. As such, the null hypothesis $H_3$ (Anchoring) is rejected.

*Herding*

For the analysis of herding behavior and the investment decisions, respondents (A4 and A9) claim that investors believe that they are influenced by the herding effect when making investment decisions because they believe that when the number of investors investing in the company increases, it implies that the particular company has good prospect and relatively higher return, with high confident level to investors to be included in the investment portfolio. Though, one argues that in order "to get a high return on your investment, you need to be different". In addition, interviewee (A5) states that he would trust the opinions and experiences of friends and family rather than relying on his own judgments.

On the other hand, the interviewees (A2 and A6) contend that those people affected by other investors' decision are usually irrational, they feel nervous and worried when their investment decisions are different from other investors.

Correspondingly, interviewees who said they are not influenced by herding provide the following reasonings. Respondent A1 states "I don't often participate in or discuss with crowds. I do my own research, and most of the time I make purchases based on my own ideas and strategies." Interviewee (A7)expresses that he chooses to trust himself more than the crowd.

Though, interviewee (A8)is not sure as he thought it would depend on how the participating groups behaved for the actions of a group of people also ensure the mainstream of the market.

In this case, the results of the qualitative research through the interview on whether herd behavior would influence investment decisions is mixed. Hence, we fail to reject the null hypothesis H4 (Herding).

Table 6: Summary quantitative and qualitative results for this study

| | Survey | Interview | Consistent |
|---|---|---|---|
| Self-Control (H1) | Not significant | Mix | Yes |
| Loss Aversion (H2) | significant | Agree | Yes |
| Anchoring (H3) | significant | Agree | Yes |
| Herding (H4) | Not significant | Mix | Yes |

## V.CONCLUSION AND IMPLICATION

The main objective of this study is to examine the effects of self-control, loss aversion, anchoring and herding behavior on the investment decisions of Malaysians during the COVID-19 pandemic. The results of this research did not support that self-control has an impact on the investment decisions of Malaysians during the COVID-19 epidemic. Therefore, it is not in line with the previous studies Nada (2013), Pompian (2006) and Ang et al. (2019). In this research, some investors believe that they have good self-control in making investment decisions, and notto overspend on investment, but this does not significantly affect their investment decisions. In this study, loss aversion has a significant impact on the investment decisions made by Malaysians during COVID-19. The finding is same as previous studies Anum and Ameer (2017), Arano, Parker, and Terry (2010) and Luong and Ha (2011). In this research we observe that most interviewees believe that loss aversion will influence investment decisions, especially the novices. The results further demonstrate that anchoring has significant impact on the investment decisions of Malaysians during the COVID-19 pandemic. The finding is consistent with the studies by Cen, Hilary, and Wei (2011), Megan et al. (2016) and Ngoc (2013). As mentioned in the interview, the anchoring phenomenon is more pronounced when newcomers enter the market, because the initial information they receive influences their investment decisions. However, herding effect has no significant relationship with the investment decisions of Malaysian investors during the COVID-19 pandemic. This result is contrasted to the studies done by Ghalandari and Ghahremanpour (2013), Alquraan, Alqisie, and Shorafa, (2016), Anum and Ameer (2017) and Luong and Ha (2011). According to the research of Ghalandari and Ghahremanpour (2013), investors with herding characteristics rely more on the suggestions given by other people or mass investors to make investment decisions.

This study provides implication on behavioural finance so that people have a better understanding of the impact of rational human behaviours on investment decisions before entering the investment market, especially during pandemic period. Investors tend to make irrational investment decisions due to psychological factors and human emotions, which aggravated by the pandemic and economic turmoil. The findingscontribute to the novice or existing investors someawareness of what human elements affect their investment decisions during pandemic. This knowledge enables investors to develop better investment strategies in advance and prevent themselves from acting irrationally when making investment decisions, henceforth, reduce the possibility of losses. Besides, if the concept of behavioural finance can be widely understood when Malaysians make investment decisions, it would have a positive impact on the Malaysia economy. However, for policy makers, it gives them a better understanding of the sentiments that affect investors when making investment decisions, so behavioural finance can be considered when developing policies and principles, thus improving the quality of policies making. For financial institutions, when discovering and controlling the impact of investors' financial behaviours on investment decisions, financial institutions are able to innovate and provide investors with better products and services.

Based on a behavioural finance approach, this research provides better understanding of the determinants of Malaysians' investment decisions during the COVID-19 pandemic. The behavioural finance factors, namely self-control, loss aversion, anchoring, and herding are examined. The results of this research indicate there is a significant relationship between loss aversion and anchoring and the

investment decisions made by Malaysians during the COVID-19 pandemic, while there was no significant relationship between self-control and herd behaviour. As this research tends to focus on the decisions made by emerging or potential investors to adapt to the crisis brought about by the COVID-19 pandemic. Therefore, it provides a better guide for future researchers and readers who explore the economic crises because of sudden events and avoid making irrational investment decisions during the crisis. Apart from this, it is also important for Malaysians' potential investors and those who are interested in investing to be aware of the behavioural finance biased when strategizing their investment plans.

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## APPENDIX

Interview Questions

Q1. What are the factors that you would consider when makinginvestment decision? What? How?

Q2. Do you think self-control affects your investment decisions? How? Why? (Self-control: Tendency that causes people to fail to act in pursuit of their long-term, overarching goals because of a lack of self-discipline.)

Q3. Do you consider yourself as loss-averse when making investment decisions? Why yes ?why not? (Loss aversion: Investors are so fearful of losses and focus on trying to avoid a loss more so than on making gains.)

Q4. Do you think the anchoring effect has an impact on making investment decisions? How? Why?(Anchoring effect: Rely too much on pre-existing information or the first information they find when making decisions.)

Q5. Do you think herd behavior will influence you when making investment decisions? Why?(Herd behavior: individual decisions are influenced by group behavior.)