

GOVERNANCE OF BEHAVIOURAL BIASES IN ASSET MANAGEMENT INDUSTRY: INSIGHTS FROM FUND MANAGERS IN MALAYSIA

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ABSTRACT

Institutional investors' behavioural biases have been growingly observed in global financial markets but the governance policy initiatives to mitigate these biases have been long overdue. Taking Malaysia as the case, this paper examines the possibility of behavioural biases among professional investors and discusses the importance of behavioural biases governance in asset management industry. Combination of survey and Delphi methods are used for data collection (survey) and validation of opinions (Delphi). The survey shows the possibility of behavioural biases impacting the thought, decision, and investing strategies of the fund manager. Of great concern, the need to govern behavioural biases in the fund management governance framework has been neglected. This brings challenges to the performance and sustainability of fund management industry. This paper provides behavioural finance insights to inform researchers, practitioners and regulators on the needs and ways to govern behavioural biases through behavioural governance.

Keywords: behavioural analysis, behavioural biases, behavioural finance, behavioural governance, institutional investors

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INTRODUCTION

Behavioural biases among institutional investors are real, permanent, and crucially impacting Malaysia asset management industry performance and sustainability as well as financial market efficiency. Behavioural finance postulates that normal investor behaviour, despite mostly intelligent, often deviates from logic and display many behavioural biases in their investment decision-making processes (Baker & Ricciardi, 2014; Statman, 2014). Behavioural biases can be grouped into two categories namely cognitive and affective biases, both yield irrational behaviour and decision in financial markets. In investment practices, behavioural biases could cause prices to deviate from fundamental value in the long term (Shefrin, 2000). This systematic mispricing causes substantial resource misallocation (Daniel, Hirshleifer, & Teoh, 2002) and directly affects financial market efficiency stability. Noting these facts, it is important for fund management institutions and regulators to understand this issue.

To date, mounting evidence of irrational behaviour in financial institutions and repetitive financial market crises are sufficient to warrant attention on the need to govern the behavioral biases. It has been acknowledged in finance literature that fund managers are portrayed as herds that exacerbate volatility, destabilise markets, increase the fragility of the financial system, and consequently impair financial market efficiency (Bikhchandani & Sharma, 2001; Allen & Wood, 2006). In fact, the 2008 global financial crisis is largely due to behavioural biases and this pointed to the failure of traditional governance framework (Arsalidou, 2016). Arising from these crises, a number of developments in recent years have combined to put the issue of financial stability as the top agenda which include a focus on costly crises in national financial systems, and several high-profile mishaps at individual institutions (Crockett, 1997). To mitigate continuous damage in financial markets due to investor irrationality, governance of behavioural biases are needed to be incorporated into the existing governance framework (Cuthbertson, Nitzsche, & O'Sullivan, 2016).

Despite long appearance of behavioural biases in global financial market practice, governance of these biases have been neglected in the current governance framework of financial institutions and markets. This is because the current financial laws and policies have been influenced and formed based on modern finance core ideology (i.e. human rationality and market efficiency) which dominates financial practice and policy (Cunningham, 2002). This result to the ignorance of the issue of biases in human behaviour in general corporate governance framework (Marnet, 2005) by the policy makers. Equally important, the same issue has been less attended and insufficiently tackled in the governance literature (Marnet, 2005; Bodolica & Spraggon, 2011).

Research in behavioural governance is still new with limited evidence. However, it draws notable growing interest from the interdisciplinary science. Key theoretical perspectives could be referred from *the nudge theory* (Thaler & Sunstein, 2008), *the behavioural theory of the firm* (Gavetti, Greve, Levinthal, & Ocasio, 2012), *behavioural governance* (Huse, 2005; Morck, 2008; Van Ees, Gabrielsson, & Huse, 2009; Bodolica & Spraggon, 2011; Virginia & Martin, 2011; Westphal & Zajac, 2013), *Islamic governance* (Lewis, 2005; Choudhury & Alam, 2013), and the newly emerging *neuroethics* research (Evers, 2007; Levy, 2008; Northoff, 2009). All of these interdisciplinary research are generally looking at the ethical concepts and practices of human in organisation, markets and society levels.

The aims of this study are to examine evidence proving the presence of behavioural biases among fund managers in Malaysia and to discuss ways to govern behavioural biases through behavioural governance. Noting that behavioural biases are argued to be higher in Asian markets (Kim & Nofsinger, 2008), Malaysia is conveniently chosen as a case to study behavioural biases. A single country investigation is preferred to control for homogeneity of the behaviour. In addition, Malaysian financial market is an important market for global fund managers for geographical portfolio diversification. Recent evidence on the presence of various behavioural biases among institutional investors in Malaysia have been documented by many studies (see: Lai, Low, & Lai, 2001; Lai, Tan, & Chong, 2013; Mohamad & Perry, 2015; Khan, Tan, & Chong, 2016; Ahmad, Ibrahim, & Tuyon; 2017b; Khan, Naz, Qureshi, & Ghafoor, 2017; Khan, Tan, & Chong, 2017; Jaiyeoba, Adewale, Haron, & Che Ismail, 2018). In addition, some studies provide evidence on the presence of behavioural biases on general market perspective (Brahmana, Hooy, & Ahmad, 2012; Tuyon, Ahmad, & Matahir, 2016; Anusakumar, Ali, & Hooy, 2017).

This research extends the above enquiries by investigating how behavioural biases could be governed by reference to Malaysia case. The study of behavioural biases governance in the Malaysian financial market is crucial given the following grounds. Fund management firms are the largest players in the Malaysian financial market and several fund management firms are considering behavioural elements in their fund management strategies as summarised in Table 1. Noted that some are going against the behavioural biases and others are exploiting them. Yet, the behavioural finance courses conducted in Malaysia are still limited. List of behavioural finance courses (past and on-going) in Malaysia is as tabulated in Table 2. Of particular important, misconduct cases in Malaysian financial markets are largely due to human errors. Based on the Securities Commission's annual report (2017), the top issues are related to possible market misconduct involving

insider trading (56%), corporate governance (17%), securities fraud (9%), and market manipulation (6%). On a positive note, acknowledging the limitations of traditional regulatory policies that are designed on the assumption of rational human behaviour, and the potential regulatory benefits offered by behavioural insights, Securities commission have established the behavioural analysis unit in 2017 to undertake behavioural studies and to design better policies that have more effective outcomes (Securities Commission of Malaysia, 2017). However, the behavioural initiative is still in early stage and no specific behavioural governance policy has been executed yet.

THEORY AND EVIDENCE ON INSTITUTIONAL INVESTOR BEHAVIOURAL BIASES

Theoretical Underpinning

In behavioural finance, vital to effective financial market and institution policy design is the recognition that the financial world is organised by bounded rational agents and that the financial markets are imperfect. This research briefly introduce the following behavioural theories that shed lights on an imperfection in human behaviour and behavioural governance.

Bounded rational theory (Simon, 1955) offers the behavioural model of individual choice, which does not assume full rational of market players. The bounded rationality theory postulates that individual decisions and behaviours contain both rational and irrational elements. Thus, decisions are normally goal oriented and adaptive (Jones, 1999). The bounded rationality of human decision has been conceptualised by Kahneman (2003) into the dual system of human mind; intuition (System I) and reasoning (System II). The operational processes of System I is categorised as fast, automatic, effortless, associative and emotional. While the operational processes of System II are slower, serial, effortful, deliberately controlled and rule-governed.

Gene-culture coevolutionary theory brings to behavioural finance attention the gene-culture coevolution (Rushton, Littlefield, & Lumsden, 1986; Gintis, 2011) that embraces the importance of culture and complex social organisation to the evolutionary success of Homo sapiens, whereby, individual fitness in humans depends on the structure of social life. This theory postulated that culture is both constrained and promoted by the human genome, human cognitive, affective and moral capacities are the product of an evolutionary dynamic involving the interaction of genes and culture.

Table 1
Behavioural strategies employed by Malaysian fund managers

Fund management firms	Behavioural finance strategies	Extracted from
Capital Dynamic Fund Manager and Investment Adviser	We do <i>not</i> act on tips, rumours, hearsay, etc.	Investment philosophy
Golden Touch Asset Management Sdn. Bhd.	The strategy utilises both fundamental and <i>technical analysis</i> in the quest for performance.	Investment strategy
MTC Asset Management (M) Sdn. Bhd.	Investing with patience and <i>ignoring fear and greed</i> .	Investment philosophy
Saturna Sdn. Bhd.	We try <i>not</i> to chase “fad” stocks or fashionable investment trends.	Investment philosophy
Standard Financial Adviser Sdn. Bhd.	Employed a tactic asset allocation (<i>taking advantage of short-term market trends, momentums, and anomalies</i>).	Investment philosophy

Notes: The website of fund managers in Malaysia is manually checked for incorporation of behavioural finance strategies in their fund management process.

Table 2
Behavioural finance courses conducted in Malaysia

Behavioural finance related courses	Organiser
Behavioural finance and value creation in banking. Customer behaviour and consumer psychology in banking. An insight into behavioural finance – a banker’s perspective.	Asian Banking School
Tricks of the trade: the (mis)behaviour of financial markets.	Asian Institute of Chartered Bankers
Momentum-based indicators masterclass.	Bursa Malaysia
Behavioural corporate finance on valuation, capital budgeting and corporate decision. Behavioural corporate finance on capital structure, dividend policy, agency conflict, corporate governance, group process and M&A. Psychology of investing: victory over your thoughts, success is yours!	CHK Consultancy Sdn. Bhd.
Understanding behavioural finance and the psychology of investing.	Federation of Investment Managers Malaysia
Behavioural finance.	RAM Holdings Group
The psychology of investing. Balanced approach methodology: using market sentiment with fundamental and technical analysis.	Securities Commission Malaysia Continuing Professional Education

Notes: Obtained from random search on the website using keywords, “*behavioural finance, course, seminar, training, in Malaysia*”.

Prospect theory is an alternative model of decision making under risk that acknowledge human imperfection idealised by Kahneman and Tversky (1979). Prospect theory distinguishes two phases in individual choice process namely framing and valuation. In the framing stage the individual constructs a representation of the acts, contingency and outcomes relevant to the decision. In the evaluation stage, individual assess each of the prospects available and choose accordingly. Prospect theory offers valuable behavioural insights on firm and individual level risk taking behaviour (Holmes, Bromiley, Devers, Holcomb, & McGuire, 2011). In the context of governance of financial institution, prospect theory are significant in understanding managers' tendency to be risk-seeking in situation of possible loss and risk averse in a situation of a certain gain is likely (Arsalidou, 2016).

Nudge theory of Thaler and Sunstein (2008) acknowledged the bounded rational of individuals and suggested the behavioural ways to mitigate possible biases arising our of individual bounded rationality. In particular, the theory suggested that if the irrational behavioural or decision making is the result of cognitive boundaries, biases, or habits, this behaviour may be "nudged" toward a better option by integrating insights about the boundaries, biases, and habits into the "choice architecture" surrounding the behaviour i.e. the physical, social, and psychological aspects of the contexts in ways that promote a more preferred behaviour. Nudges could change behaviour through various intervention mechanism that is more effective and costless (Sunstein, 2014). For instance, through a financial incentives, providing relevant information, actively blocking an inappropriate choice, and other possible behavioural intervention mechanisms (Kosters & der Heijden, 2015).

Empirical Evidence on Institutional Investor Behavioural Biases

Selected global survey-based evidences of fund managers' behavioural biases covering 19 countries as summarised in Table 3 is adapted from Ahmad, Ibrahim and Tuyon (2017a). These behavioural biases are inducing irrational investment decisions. We extend this literature perspective by reviewing empirical evidences from interdisciplinary inquiries which provide insights that different individual or group of individual has different degree of behavioural biases. This non-homogeneous behavioural biases are due to differences in individual, cultural, and institutional forces as discussed in the following.

Individual traits

Individual traits refers to demographic and personality type. Behavioural aspects of demographic and personality type possible influence on decision making and

financial risk taking behaviour have been well documented in finance and economics literature since Siegal and Hoban (1982). Demographic forces as important determinants for individual risk taking decision have been well established in behavioural finance literature. The first factor is gender difference. In psychology research, men have been acknowledged as more risk tolerant compared to women in many risks taking decisions (Byrnes, Miller, & Schafer, 1999) partly because they are more exposed to overconfidence bias (Montier, 2002). This hypothesis has also been supported in behavioural finance research (de Venter & Michayluk, 2008; Halko, Kaustia, & Alanko, 2012). The second factor is age difference. Positive relationship between investor ages and level of risk tolerance has been empirically supported in finance research. Riley and Chow (1992) documented that investor level of risk aversion decreases with their ages. However, evidence from Halko et al. (2012) showed that age effect on risk aversion is reduced when controlling for financial knowledge. The third factor is experience differences. Empirical evidences showed that more experienced and expert investors are more prone to overreaction and overconfidence biases (Chen, Kim, & Nofsinger, 2004; Griffin & Tversky, 1992) and more risk takers (Corter & Chen, 2006). An education difference is the fourth factor. Previous research suggests that education is important in predicting preferences and behaviour. In finance research, finance education that is expected to increase financial literacy has been associated with choices for investment (Schooley & Worden, 1999; Bernheim & Garrett, 2003) risk taking behaviour (Wang, 2009; Sjöberg & Engelberg, 2009) and encourages wealth-creating investment (McCannon, 2014). Nikiforow (2010) shows that training on behavioural finance does increase awareness and reduce the fund managers' behavioural biases. Personality types are psychological characteristics of individual. Many have examined the connection between personality type and risk tolerance level. There are many personality tests available but the popularly used psychology-based personality tests are the Myers-Briggs Type Indicator,¹ Big Five personality taxonomy,² Zuckerman's Sensation Seeking Scale (Zuckerman, 1994), Domain-Specific Risk Taking Scale³ (Weber, Blais, & Betz, 2002; Blais & Weber, 2006) and Risk Tolerance Questionnaire (Corter & Chen, 2006). Using the Myers-Briggs Type Indicator test in behavioural finance research provides insights that higher score for extraversion, intuition, thinking and perceiving are positively related to higher level of risk tolerance (Filbeck, Hatfield, & Horvath, 2005). In Mayfield, Perdue and Wooten (2008), using big five personality test, they provide evidence that extraverted individual intend to engage in short-term investing and neuroticism individuals shows that they are more risk averse and do not engage in short-term investing. Meanwhile, individual with openness to experience are inclined to engage in long-term investing.

Cultural traits

Based on sociology perspective, culture is partly important in understanding individual behaviour. Cultural factor has a great determinant role in investment decision-making because investors personally and collectively adhere to conserve personal relationship within the organisation or society they belong to (Ellison & Fudenberg, 1993). Discussions on cultural important in behavioural finance theory is important. Growing evidences from behavioural finance research and other sociology research indicated that investors' behaviours are related to the cultural origin of the individual. This perspective suggests that individual investment behaviour could be predicted based on their cultural characteristics. We synthesize these survey-based evidences based on Hofstede's cultural index⁴ as graphically presented in the following self-explanatory Figure 1. Summary of the survey-based evidences provides further evidence on this issue that the relation between culture and finance is complex. As shown in this figure, regardless of cultural dimension, all countries experienced behavioural biases as documented in the 31 articles reviewed. The theoretical link between culture and finance is shown by the Hofstede's cultural dimension (Hofstede, 1980) which has been recently referred in behavioural finance research to explain the behaviour of investors across different cultural context. Nguyen and Truong (2013) provides worldwide evidences that information content of stock markets is higher in more individualistic countries and in low uncertainty avoidance countries. Beracha, Fedenia, and Skiba (2014) provide evidence those institutional investors from different cultural background trades differently. In addition, they provide evidence that institutional investors trade at higher frequency in their home countries and in countries with similar cultural background. This finding can be corroborated to earlier findings by Anderson, Fedenia, Hirschey and Skiba (2011), which provide evidence that home bias and international diversification by institutional investors are influenced by cultural bias. Bialkowski, Bohl, Kaufmann and Wisniewski (2013) confirmed that fund managers exploit the Ramadhan anomaly in their trading strategy which is related to cultural-holiday induced bias in finance literature.

Institutional traits

Two important institutional traits namely governance and ethical concerns. Current corporate governance policy and practice, which are based on the rational model of decision making, may be insufficient to mitigate future corporate failure (Marnet, 2005; 2007). Lack of corporate governance in curving the behavioural biases and information asymmetry has been pointed out as one of the reasons for failure in addressing behavioural induced risks in financial markets. Marnet (2005)

argued that to gamble imprudently seems inherent in human nature. Stocks returns in emerging markets tend to be more positively skewed which can be attributed to managers having more discretion to release good information immediately and bad information slowly (Claessens & Yurtoglu, 2013). To complement this limited evidence, we review the empirical evidences on institutional investor’s behavioural biases against the rank of governance index⁵ of their respective countries to gauge whether higher corporate governance revealed lower incidences of behavioural biases by institutional investors. This surprising summary portrays that both countries with high and low governance index experiencing behavioural biases. This is probably due to the fact that the current practice of corporate governance does not take into account the need to curb behavioural biases. Some scholars have voiced the needs for corporate governance to include a new mission for corporate governance to control behavioural biases in firms and in financial markets in general (Suto & Toshino, 2005). Being ethical can help to reduce bounded rationality as discussed in Zhang, Fletcher, Gino and Bazerman (2015). Ethical concerns have also been reported to have important roles in mitigating behavioural biases in fund management. In this perspective, Marco, Munoz and Vargas (2011) provide evidences of differences in risk taking behaviour between ethical and conventional mutual fund managers noting that the former is less aggressive in risk taking. This evidence can be corroborated with the findings drawn in Wins and Zwergel (2015) which noted that ethical funds are less risky despite perform lower in comparison with conventional funds.

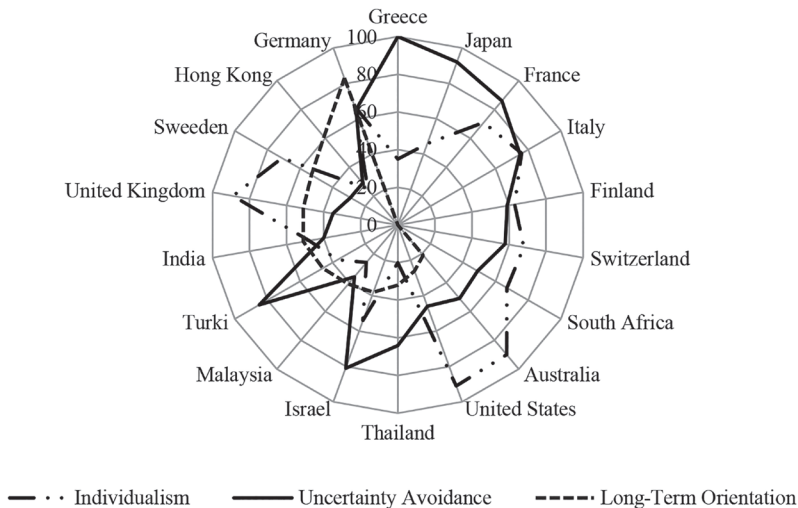


Figure 1. Hofstede’s cultural dimension for surveyed countries

Notes: This figure plotted the cultural profile of the surveyed countries in the referred 31 articles (as listed in Table 1). Generally, this figure points to the ideas that Asia countries are more on collectivism society, having lower uncertainty avoidance, and lower long term orientation.

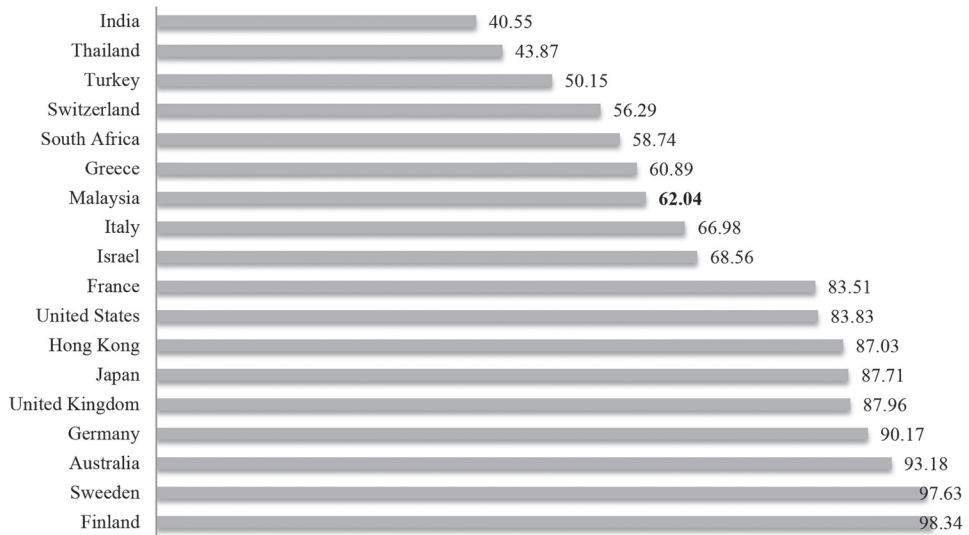


Figure 2. Governance Index of the surveyed countries

Notes: This figure provide summary of the surveyed countries governance index. Also noted those, governance index for Asia countries are lower in comparison to more developed countries.

Table 3

Summary of studies on fund managers' behavioural biases

Behavioural biases	Countries	Studies
Anchoring	Kenya	Waweru, Munyoki and Uliana (2008)
Availability bias	Kenya, Israel	Waweru, Munyoki and Uliana (2008), Kudryavstev, Cohen and Schmidt (2013)
Confirmation bias	Germany	Menkhoff and Nikiforow (2009)
Disposition effect	Japan, Israel, Sweden	Susai and Moriyasu (2007), Kudryavstev, Cohen and Schmidt (2013), Bodnaruk and Siminov (2015)
Emotion	United States, United Kingdom, Asia	Tuckett and Taffler (2012)
Gambler's fallacy	Kenya, Israel	Waweru, Munyoki and Uliana (2008), Kudryavstev, Cohen and Schmidt (2013)
Gut feelings	Malaysia	Lai, Low and Lai (2001)

(continue on next page)

Table 3: (continued)

Behavioural biases	Countries	Studies
Herding	Japan, Germany, United States, Thailand, Switzerland, Italy, Israel	Suto and Toshino (2005), Menkhoff, Schmidt and Brozynski (2006), Susai and Moriyasu (2007), Beckmann, Menkhoff and Suto (2008), Lutje (2009), Menkhoff and Nikiforow (2009), Kourtidis, Sevic and Chatzoglou (2011), Kudryavstev, Cohen and Schmidt (2013)
Hot hand fallacy	Israel	Kudryavstev, Cohen and Schmidt (2013)
House money effect	Germany	Menkhoff and Nikiforow (2009)
Inconsistence in risk tolerance	Greece, Malaysia	Kourtidid, Sevic and Chatzoglou (2011), Mahat and Ali (2012)
Loss aversion	United States, Kenya	Olsen (1997)
Mental accounting	Kenya	Waweru, Munyoki and Uliana (2008)
Optimism	France	Broihanne, Merli and Roger (2014)
Overconfidence	Germany, Australia, Kenya, United States, Switzerland, Italy, Thailand, Greece, France	Menkhoff, Schmidt and Brozynski (2006), De Venter and Michayluk (2008), Waweru, Munyoki and Uliana (2008), Menkhoff (2010), Kourtidid, Sevic and Chatzoglou (2011), Broihanne, Merli and Roger (2014)
Reflection effect	Germany	Menkhoff and Nikiforow (2009)
Representativeness	Kenya	Waweru, Munyoki and Uliana (2008)
Sentiment	India	Sehgal, Sood and Raiput (2009)
Social influence	Greece	Kourtidid, Sevic and Chatzoglou (2011)
Use of Other Information		
Newspaper reports	Saudi Arabia	Al-Abdulqader, Hanna and Power (2007)
Political news	Malaysia	Lai, Low and Lai (2001)
Relying on analysts reports	United Kingdom	Clatworthy and Jones (2008)
Relying on other opinions	Hong Kong, Sweden	Wong and Cheung (1999), Hellman (2005)
Rumors	Malaysia	Lai, Low and Lai (2001)
Use of non-accounting information	United Kingdom, Germany	Clatworthy and Jones (2008), Lutje (2009)
Words of mouth	United States	Shiller and Pound (1989)

(continue on next page)

Table 3: (continued)

Behavioural biases	Countries	Studies
Irrational Investment Behaviour		
Excessive portfolio turnover	Sweden	Bodnaruk and Siminov (2015)
Home bias	Germany	Menkhoff and Nikiforow (2009)
Momentum trading	United States, United Kingdom	Richardson, Tuna and Wysocki (2010)
Winner and spotlight stocks	Germany	Arnswald (2001)
Self-marketing	Japan	Suto and Toshino (2005)
Self-monitoring	Greece	Kourtidad, Sevic and Chatzoglou (2011)
Short-termism	Japan, Germany, United States, Switzerland, Italy, Thailand	Suto and Toshino (2005), Lutje (2009), Menkhoff (2010)
Use of technical analysis	Hong Kong, Malaysia, Saudi Arabia, Germany, Switzerland, United States, Italy, Thailand, United Kingdom	Wong and Cheung (1999), Lai, Low and Lai (2001), Al-Abdulqader, Hanna and Power (2007), Kourtidis, Sevic and Chatzoglou (2011), Menkhoff (2010), Richardson, Tuna and Wysocki (2010)

Source: Adopted from Ahmad et al. (2017a)

Notes: This table provides summary of the behavioural biases among institutional investors reflected in the above-mentioned 31 referred studies based on survey methods.

Issues on Governance of Behavioural Biases in Asset Management Industry

Governance of behavioural biases is a serious problem to the fund management institutions and policy makers. Mounting evidence have highlighted the sources and repercussion of behavioural biases in financial markets globally (Chui, Titman, & Wei, 2010; Anderson et al., 2011; Kumar & Goyal, 2015). These behavioural biases bring serious repercussion to the efficiency and sustainability of financial systems in general. In specific context of the study, behavioural biases challenge the performance and sustainability of fund performance. Earlier evidence highlighted the facts that the mutual fund late trading scandal of 2003 brought the failure of mutual fund governance to the public's attention. Calls for stronger shareholder protections following the 2003 mutual fund scandal, fund boards have become increasingly independent and transparent. Despite this transition, poor governance persists (Calluzzo & Dong, 2014). Further, Hellman (2005) and Cuthberston, Nietzsche and O'Sullivan (2016), highlighted the behavioural effects on fund performance and the needs for governance of these biases.

The idea to govern behavioural issues in corporate governance is to induce greater rationality and more considered ethics in corporate governance (Morck, 2008). In this regards, Kurniawan, How and Verhoeven (2016) provides evidence on the effectiveness of fund governance in containing investment style drift in the mutual fund industry. Shefrin (2000) advises practitioners to recognize their own and others mistakes, to understand the reasons for these mistakes, and to avoid mistakes. In investment analysis and fund management practices, Fromlet (2001) argued that behavioural finance theories suggest ways to avoid serious mistakes in investment analysis and find profitable investment strategies. As such, institutional investors need to be aware of the growing importance of behavioural finance perspectives (Montier, 2002). Strategies and checklist to overcome behavioural errors are discussed in Kahneman and Riepe (1998), Fromlet (2001), and Baker and Ricciardi (2014).

In Malaysia fund management governance framework, so far, the behavioural biases are not recognised in the policies documents. We qualitatively review two governance policy documents. First is *the Malaysia Code for Institutional Investors*⁶ which was first drafted in 2014. This governance policy contains six principles of the code namely; disclosing policies on stewardship, monitoring investee companies, engaging investee companies, managing conflict of interest, incorporating sustainability considerations, and publishing voting policy. Second is *the Guidelines on Compliance Function for Fund Management Companies*⁷ which has been available since in 2011. This policy document requires fund management firm to comply with nine core principles namely; integrity; skill, care and diligence; acting in clients' interests; supervision and control; adequate resources; business conduct; client asset protection; communication with investors and clients; and conflict of interest. Both of these governance policy documents contain no discussion about behavioural biases governance. In fact, the Malaysian Code for Institutional is not mandatory but voluntary.

METHODOLOGY AND DATA

This research uses a triangulation of survey and Delphi methods to understand the fund managers investment practices and opinions on the need and ways to govern behavioural biases. To theoretically understand investor behaviour, the best approach is to focus on individual decision making as suggested in Warneryd (2001). The data from this study has been collected using two methods. First, a post-based survey⁸ has been conducted in 2016 involving 30 fund managers working with asset management firm in Malaysia as summarised in Table 4 Panel A. In this survey, a set of questionnaire has been prepared to

solicit fund managers opinions on the followings; (i) views on financial market efficiency, (ii) awareness on behavioural risks, (iii) governance of behavioural risks, and (iv) behavioural biases in investment decision, strategy, and portfolio management.

Table 4
Respondents profile

Panel A: Survey respondents profile ($N = 30$)					
Characteristics	Frequency	Percent	Characteristics	Frequency	Percent
Firm type			Education		
Local private	16	43.3	Diploma	2	6.7
Local public	5	16.7	Degree	17	56.7
Foreign	9	33.3	Master	5	16.7
Firm establishment			PhD/DBA	1	3.3
Less than 5 years	2	6.6	Professional/CFA/Others	3	10
5 to 10 years	9	30	Designation		
11 to 20 years	5	16.6	Fund manager	13	43.3
21 to 52 years	11	36.6	Senior fund manager	8	26.7
Gender			Head of fund manager	2	6.7
Male	19	63.3	Chief investment officer	2	6.7
Female	9	30	Fund manager & Research	3	10
Age			Experience		
Below 30 years old	6	20	Below 3 years	5	16.7
Between 30–39 years old	12	40	3 to 5 years	9	30
Between 40–49 years old	7	23.3	6 to 10 years	8	26.6
Above 49 years old	3	10	11 to 21 years	6	19.9
Panel B: Delphi expert profile ($N = 4$)					
Respondents ID	a	b	c	d	
i) Designation	Fund manager	Fund manager	Fund manager	Director	
ii) Type of organisation	Asset management	Asset management	Asset management	Asset management	
iii) Working experience	2 years	2.5 years	10 years	12 years	
iv) Gender	Male	Male	Male	Female	

Notes: Panel A summarise the extract part of respondent ($N = 30$ persons) profile for the survey. While Panel B summarise the Delphi expert ($N = 4$ persons) profile.

Second, the Delphi method which is the judgement of experts (which can involve a number of less than ten) by means of successive iterations of a given questionnaire, to show possible convergence of opinions obtained in the first survey (Huan-Niemi, Rikkonen, Niemi, Wuori, & Niemi, 2016). In this research, an online Delphi method⁹ is used to verify the current governance practice and the need to incorporate behavioural risks in the existing fund management governance framework. We have randomly invited a number of Chartered Financial Analysts (CFA) charterholders who are currently working as fund managers in Malaysia. The information is obtained from CFA members' directory¹⁰. We managed to get four respondents to be the Delphi expert for this study as summarised in Table 4 Panel B. Three of them are a fund manager and one is a director with experience from 2 to 12 years. This justifies the knowledge and experience of the Delphi experts employed in this study. In the survey and Delphi method, we solicit the opinions of respondents on issues of research interest (*i.e. bounded rational of investors, market imperfect efficiency, and the relevant of behavioural risk governance*). These opinions can be represented as a proxy for true behaviour. This is in line with the concepts of opinions and beliefs are acquired behavioural dispositions which refer to tendencies toward particular acts, such as evaluating, or acting toward a particular object or a particular process (Bergman, 1998).

FINDINGS

Survey of Fund Managers Opinions

Views on financial market efficiency

In the first section of the survey questionnaire, we seek fund managers opinions on the state of Malaysia market efficiency. As noted in Table 5, the fund manager's opinions can be summarised as follows: (i) They agreed that it is possible to predict future returns to Malaysian stocks using various source of information including past returns, private and publicly available information; (ii) They believe that the market is offering arbitrage opportunities, and (iii) They confirmed that fund managers can beat the market performance without taking above-average risk. These opinions are reflected by a high percentage of respondents who agree to five items asked in the questionnaire. Collectively, these opinions is suggesting the presence of possible bounded rationality and inefficiency in the market.

Awareness on behavioural biases and opinion on governance of behavioural biases

The current research also solicits funds managers' awareness on behavioural finance theory and behavioural risks as well as governance of these behavioural risks in investment practices. The results are presented in Table 6. As for the awareness on behavioural risks, majority of the respondents were not aware of any behavioural finance theory and did not undertake any courses or training related to behavioural finance. However, majority indicated that they are aware of some behavioural risks associated with investment. In addition, majority of them also indicated that some behavioural finance strategies have been incorporated in investment practices and believe that behavioural risks matter in the short term only (Panel A). As for governance of behavioural risks, it is interesting to note that majority of the respondents indicated that mitigating behavioural risks have been incorporated in; investment policy, governance mechanism, audit of trading process, and audit of portfolio management record (Panel B). Nonetheless, the specific governance mechanisms used to mitigate these behavioural risks have not been solicited from the respondents.

Behavioural biases in investment management practice

Investment analysis and source of information used are summarised in Table 7. Fund managers are using a combination of fundamental, technical, and behavioural investment appraisal approaches in their practices (Panel A). These managers rank fundamental method as a priority, rank technical into second and behavioural into third in terms of importance. The mix investment appraisal approaches are also consistent with the important sources of information referred by fund managers (Panel B). The fund managers made reference to both rational sources (i.e. company visits, annual reports, analysts' recommendations, investor relation reports, broker recommendations, and management financial reports) and information sources with possible irrational elements (i.e. Television and newspapers, internet and investment blogs, friends, and rumors). In Panel C, list of popularly referred fundamental, technical, and behavioural information have been provided by the fund managers.

Table 8 Panel A summarise the strategies used in investment decision and fund portfolio management. The results indicate the followings. First, investment decision is a collective group-based decision among designated fund managers and subjected to pre-specified investment policy of the firm. This evidence highlighted the importance of group decision making and institutional characteristics in fund portfolio management. Second, there is higher evidence of

short-termism in investment strategies. This is reflected in frequency of portfolio checking (daily – 53%), frequency of stock prices checking (daily – 83%), and in frequency of portfolio rebalancing (monthly – 37%). Short-termism is one of the popularly mentioned behavioural biases in the behavioural finance literature (evidence is provided in Table 3). Third, popular investment exit strategy is target price which can be corroborated with the use of purchase price as the reference point for profit and loss determination not based on the forecasted fair value as popularly thought in modern finance text book.

Table 8 Panel B summarises the intensity of use of several investment strategies. Generally, both fundamental and behavioural based strategies are employed by institutional investors. In particular, rational-based investing using buy and hold, dividend oriented, value and growth investing are employed by fund managers. In addition, behavioural-based trading strategies namely momentum and contrarian investment strategies (Hong & Stein, 1999; Menkhoff & Schmidt, 2005) are also noted to have significant influence on fund managers investment decision. These show the relevance of both rational and non-rational based strategies in investment decision and portfolio management.

Table 5
Opinions on market efficiency (Survey responses) (N = 30)

Question: Opinion on market efficiency <i>This section seeks your opinion on the nature of Malaysian stock market efficiency. Please indicate your scale of agreement on the following questions based on your real experience and practices.</i>	
Questions	Percentage of responses (Agree)
It is possible to predict future returns to Malaysian stocks using only past returns.	16.7
It is possible to predict future returns to Malaysian stocks using only past returns and publicly available information.	40.0
It is possible to predict future returns to Malaysian stocks using only past returns, private and publicly available information.	60.0
Investment returns are solely a compensation for risk.	50.0
Investment strategies exist that consistently beat average market returns without above-average risk taking.	60.0
I believe that, by and large, security market prices offer arbitrage opportunities.	53.3

Note: Items in question are adapted from the existing studies with refinement to the context of Malaysian market. Items are tested on five scales ranging from 1 (strongly disagree) to 5 (strongly agree) on the statements. We present the score for “agree and strongly agree” only.

Table 6

Awareness on behavioural risks and opinion on governance of behavioural risks (Survey responses)(N = 30)

Question: Awareness on behavioural risks and opinion on governance of behavioural risks
This section seeks your awareness and your firm governance on behavioural risks. Please answer either Yes or No on the following questions based on your current knowledge, experience, and practice.

Panel A: Awareness on behavioural risks

Question	Percentage of responses (Yes)
Are you aware of any behavioural finance theory?	36.7
Have you taken any behavioural finance courses during your undergraduate or postgraduate studies?	36.7
Have you ever attended any training or workshop related to behavioural finance during your employment?	43.3
Are you aware of behavioural factors and investment risk associated with them?	86.7
Behavioural finance approaches are already integrated in our investment strategies.	60.0
Do you think behavioural factors influence your trading behaviour?	83.3
Do you think behavioural factors influence your fund portfolio performance in the short term?	83.3
Do you think behavioural factors influence your fund portfolio performance in the long term?	46.7

Panel B: Governance of behavioural risks

Does your firm currently have an investment policy to mitigate behavioural risks?	63.3
Does your firm currently have a governance mechanism to mitigate behavioural risks?	63.3
Is your trading process regularly audited to mitigate behavioural risks?	66.7
Is your portfolio management record regularly audited to mitigate behavioural risks?	63.3

Note: Items in Panel A and B are self-constructed since no existing reference is available. Items are tested based on YES and NO answer options.

Table 7
Analytical approach and source of information (Survey responses) (N = 30)

Panel A: Investment appraisal methods (N = 30)											
<i>Please tick the analysis approaches employed in your investment appraisal and rank the importance of the above three analysis approaches to you.</i>											
	Methods	Important rank									
		First			Second			Third			
Fundamental	93.3	86.7			10.0			3.3			
Technical	66.7	6.7			66.7			26.7			
Behavioural	53.3	6.7			16.7			76.7			

Panel B: Important of information sources (N = 30)											
<i>Please rank (i.e. 1st very important – 10th least important) the following possible sources of referred investment information according to their importance to you</i>											
Information	Very important				Moderately important		Less important				Overall rank
	1	2	3	4	5	6	7	8	9	10	
Company visits	26.7	16.7	10.0	13.3	23.3	3.3	3.3	0.0	3.3	0.0	1
Annual reports	20.0	23.3	20.0	6.7	6.7	13.3	3.3	0.0	3.3	3.3	2
Analysts' recommendations	23.3	16.7	23.3	10.0	3.3	10.0	10.0	0.0	0.0	3.3	3
Investor relations report	3.3	3.3	3.3	16.7	20.0	26.7	16.7	10.0	0.0	0.0	4
Broker recommendations	10.0	20.0	10.0	16.0	20.0	10.0	6.7	3.3	3.3	0.0	5
Management financial reports	16.7	10.0	20.0	20.0	13.3	6.7	0.0	10.0	0.0	3.3	6
TV and newspapers	0.0	3.3	3.3	3.3	3.3	16.7	36.7	23.3	3.3	6.7	7
Internet and investment blogs	0.0	0.0	10.0	3.3	3.3	13.3	10.0	43.3	10.0	6.7	8
Friends	3.3	3.3	0.0	0.0	0.0	0.0	0.0	3.3	56.7	33.3	9
Rumours	3.3	0.0	0.0	3.3	3.3	0.0	13.3	3.3	10.0	63	10

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Table 7: (continued)

Panel C: Open ended questions	
<i>Please list five most important fundamental, technical, and behavioural information according to your priority in investment analysis and portfolio management.</i>	
Analysis use	Important referred information
Fundamental	EPS (4); DY(5); DPR (2); PER (10); PBT (2); Gearing/DR/DER (8); Earnings growth (5); Cash flows (5); Competent management (3); Corporate governance (2); Strategic advantage/ sustainable competitive advantage (2); Transparency of accounting (1); Economic outlook (2); Interest Rates (2); Financial – Balance sheet strength (7); Income statements (1); Understanding the business/Business model (3); Industry /sector positioning (3); ROI (4); NTA (1); P/BV (2); global economics (1); Growth potential (2); Shariah compliant (1); Sustainability of profits (1); IRR(1); Economics factors (5); Credit risk (1); Legal and regulations (1); ROE (2); NAV (2); Inflation (1); U.S. non-farm payrolls (1); Interest coverage (1); Relative valuations (1)
Technical	Stochastic (3); Moving average /MACD (10); Momentum (4); Bollinger bands (3); Elliot waves (1); Relative strength index (10);Volume/Volume liquidity (3); Retracement Fibonacci (1); Supply flow (1); Price movements (1); Market breadth-Advance/decline indicator (1); 52 weeks high (1); Volatility index (1); Money averages (1); Liquidity (1); Supply and demand flow(2); DMI (6); Head and shoulder (2); Double tops/bottoms (1)
Behavioural	Market sentiment (2); behaviour of the stocks (1); Economic perceptions (1); Regional market performance (1); Sentiment (5); Overall perception (1); Contrarian trends (3); Politics (1); Herding – trade flows (4); Anchoring (2); Market liquidity (1); Market value traded (1); Policy makers statement and speech (1); Ground staff opinions (1); Investors global flows across multi assets (1); Investor position in risk assets (1); Emotion (2); Rules of thumb (1); Hindsight (1); Support and resistance (1); Past experience (1)

Note: Open ended questions have been incorporated into the questionnaire to solicit specific fundamental, technical, and behavioural information popularly used by fund managers in investment appraisal. The responses are recorded manually and the number in the parenthesis is the number of respondents mentioning the respective variable.

Table 8
Investment management strategies (Survey responses)

Panel A: Investment Decision and Management
Please answer them thoughtfully based on your current practice.

		<i>n</i>	<i>%</i>
Domestic investment		25	72.6
Investment decision	According to prescribed investment policy	12	40.0
	Joint decision with colleagues	9	30.0
	After consultation	5	16.7
	After authorisation	2	6.7
	Others	2	6.7
Investment horizon	Short-term	1	3.3
	Medium-term	11	36.7
	Long-term	7	23.3
	Combinations	11	36.7
Investment management approach	Passive investment	3	10.0
	Active investment	26	86.7
	Others	1	3.3
Frequency portfolio checking	Daily	16	53.3
	Weekly	6	20.0
	Monthly	6	20.0
	Quarterly	2	6.7
Frequency portfolio rebalancing	Daily	3	10.0
	Weekly	7	23.3
	Monthly	11	36.7
	Quarterly	6	20.0
	Semi-annually	2	6.7
	Annually	1	3.3
Forecasting horizon	Weeks	4	13.3
	2–6 months	7	23.3
	6–12 months	5	16.7
	1 year	1	3.3
	More than 1 year	11	36.7
	Combinations	1	3.3
Investment exit strategy	Stop loss	3	10.0
	Maximum profit	5	16.7
	Target price	14	46.7
	Wait and see	2	6.7
	Other	4	13.3
	Combination	2	6.6

(continue on next page)

Table 8: (continued)

Panel B: Investment strategy (Intensity of use)			
<i>Please answer them thoughtfully based on your current practice</i>			
		<i>n</i>	<i>%</i>
Buy and hold	Low (0%–40%)	15	50.0
	Moderate (50%–60%)	6	20.0
	High (70%–100%)	8	26.7
Momentum	Low (10%–40%)	21	70.0
	Moderate (50%–60%)	3	10.0
	High (70%–100%)	3	10.0
Contrarian	Low (10%–40%)	22	73.3
	Moderate (50%–60%)	4	13.3
	High (70%–100%)	3	9.9
Dividend oriented	Low (10%–40%)	16	53.1
	Moderate (50%–60%)	6	20.0
	High (70%–100%)	7	23.3
Value	Low (10%–40%)	14	46.6
	Moderate (50%–60%)	2	10.0
	High (70%–100%)	13	43.4
Growth	Low (10%–40%)	16	50.0
	Moderate (50%–60%)	3	10.0
	High (70%–100%)	8	36.7

Note: Panel A summarises the possible investment decision and management strategies. While Panel B reported the intensity of use for various possible investment strategies. All of these possible strategies are referred from existing research in reference.

Validation of Survey Opinions using Delphi Method

In the Delphi method, the objective is to use industry experts to validate the responses obtained in the first survey involving 30 fund managers. In the Delphi method, four industry experts are asked to rate similar questions presented in survey questionnaire related to issue in focus as summarised in Table 9. These experts are currently holding a post as fund manager (3 persons) and director (1 person) and all of them are CFA charterholders.

On the beliefs of financial market efficiency, homogeneous opinion can be concluded that investors are bounded rational and the market is bounded and adaptively efficient. As for the awareness on behavioural biases, majority of experts were aware of behavioural biases through undergraduate/postgraduate studies and trainings provided during employment. In the current fund governance framework, majority of the experts agreed that the current regulatory and

governance framework does not take into account the need to govern behavioural biases. In addition, they did not agree on the fact that these behavioural biases have to be governed. The other opinion provides supports to this stand. One opined that behavioural risk cannot be regulated due to subjective elements involved and another one was not sure about what are behavioural biases and how could they be governed. General conclusion can be drawn that the Delphi experts and the survey respondents are homogeneous in opinions with regards to the issues of; the state of adaptive market efficiency in Malaysia, awareness and commitment to learn on behavioural finance and behavioural biases, and the need to regulate and govern the behavioural biases in financial institutions practice and financial market policy.

The analysis on findings from the Delphi method is expanded by performing behavioural analysis on the expert responses for behavioural governance framework building as discussed herein. Believe on *bounded rationality of institutional investor* can be captured from majority of expert endorsement of the opinions that the market offers arbitrage opportunities that could be exploited by investors using various information as well as the repetitive waves of financial crises and market inefficiency are due to the irrational behaviour of market players. In contrast to the survey findings, the Delphi experts' *education background* in behavioural finance have helped them to enhance their awareness of behavioural finance theory, and behavioural biases as well as its implications for trading behaviour and portfolio performance. This can be supported with the fact that all of these experts are CFA charterholders in which behavioural finance are covered in the CFA program curriculum. The absence of in-house training related to behavioural finance provided or to be conducted in the near future is an indication of the *ignorance of the importance of behavioural finance training by the management*. Training related to behavioural finance is required by fund managers to increase awareness and correcting actions on the behavioural biases as noted by one of the experts. The Delphi experts provide fair opinions that the *current regulatory and governance framework* in the fund management industry does not take into account the behavioural biases. However, they do not agree for regulation and governance of behavioural biases in fund management and financial markets. This could indicate *ignorance of the individual fund managers*. Their ignorance is due to *lack of present knowledge and information on behavioural governance*. In particular, these fund managers are not clearly informed on the followings; What behavioural biases to be governed? How to regulate and govern those behavioural biases? Can behavioural governance effectively regulate behavioural biases? and, How to distinguish between agency risk and behavioural biases? In this regards, they demand the *fund management industry* and its *regulators* to *increase the awareness* of, and *espouse the benefits* of behavioural finance and behavioural governance to them as practitioners.

Table 9
Responses from Delphi experts

Question 1: Opinion on the State of Market Efficiency		
	Agree	Disagree
i) It is possible to predict future returns to Malaysian stocks using only past returns.	2	2
ii) It is possible to predict future returns to Malaysian stocks using only past returns and publicly available information.	3	1
iii) It is possible to predict future returns to Malaysian stocks using only past returns, publicly available information, and private information.	3	1
iv) Investment strategies exist that consistently beat average market returns without taking above-average risk.	2	2
v) I believe that, by and large, security market prices offer arbitrage opportunities.	3	1
vi) The adaptive market efficiency hypothesis suggests that market is sometimes efficient, other times not.	3	1
vii) Empirical evidence provides testimony that the repetitive waves of financial crises and market inefficiency are due to irrational behaviour of market players.	3	1
Question 2: Awareness and Commitment to Learn on Behavioural Finance and Behavioural Bias		
	Yes	No
i) Are you aware of any behavioural finance theory?	4	
ii) Have you taken any behavioural finance courses during your undergraduate or postgraduate studies?	3	1
iii) Have you ever attended any training or workshop related to behavioural finance during your employment?		4
iv) Are you aware of behavioural bias and investment risk associated with them?	4	
v) Do you think behavioural factors influence the trading behaviour of market players?	4	
vi) Do you think behavioural factors influence investment portfolio performance in the short term?	4	
vii) Do you think behavioural factors influence investment portfolio performance in the long term?	3	1
viii) Did your organisation conducted any in-house training related to understanding of behavioural finance or behavioural bias in investing?	4	
ix) Is your organisation planning to conduct any in-house training related to understanding of behavioural finance or behavioural bias in investing?	1	3

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Table 9: (continued)

Question 3: Regulation and Governance of Behavioural Bias		
	Yes	No
i) Currently, the regulation and governance of fund management industry are guided by modern school of thought (assuming rationality of economic agents and rational operation of financial markets) which neglects the roles of behavioural biases in the policy framework. Do you agree with this opinion?	2	2
ii) The current regulatory framework for fund management industry does not take into account the behavioural biases.	4	
iii) The current corporate governance framework for fund management industry does not take into account the behavioural biases.	4	
iv) Regulation and governance of behavioural risks in fund management need to be incorporated/strengthen. Do you agree?	1	3
v) Regulation and governance of behavioural risks in financial markets need to be incorporated/strengthen. Do you agree?	1	3
vi) Regulation and governance of behavioural risks to be committed by both retail and institutional investors need to be incorporated/strengthen. Do you agree?	2	2
Other Opinions/Suggestions	Key ideas	
i) I believe the application of behavioural finance amongst industry practitioners will improve the outcomes for their clients (retail and individual) by making prudent recommendations and investment decisions that are tuned with the respective clients behavioural biases. As industry practitioners in asset management, we operate in a fiduciary capacity with an obligation to act in the best interests of our clients. I am of the opinion that behavioural finance is an area that cannot be regulated effectively given the amount of subjectivity involved. Instead, the fund management industry and its regulators would do well to increase the awareness of, and espouse the benefits of this subject matter. It requires industry practitioners such as myself to take “high level” course correcting actions when observing behavioural finance. Successful application by increasing number of industry practitioners will likely add more value to the investment decision making process and build stronger client relationships [<i>Respondent ID: b</i>].	<i>Behavioural risk cannot be regulated due to subjective elements involved.</i>	
ii) Need to define specific behavioural biases. Need to distinguish between agency risk and behavioural biases. Not sure specifically what behavioural biases regulation are needed from the questions above [<i>Respondent ID: c</i>].	<i>Not sure about what and how.</i>	

Note: This table provides summary of the questions asked to the Delphi experts (i.e. 4 CFA charterholders working as fund managers and directors of fund management company) to validate the fund managers opinion (i.e. obtained from survey of 30 fund managers) on the state of market efficiency, awareness on behavioural biases, regulation and governance of behavioural risks, and other opinions.

DISCUSSIONS

Collectively, the finding drawn in this research is in contrast to the general beliefs that institutional investors will always act rationally because they are knowledgeable and professionally trained. The discussions focused on syntheses of current research findings to the referred theories and evidences based on behavioural finance theoretical lenses as discussed below. The research use survey and Delphi methods to gauge attitudes, beliefs, and opinions which are behavioural disposition of human real behaviour on the following issues.

Belief on financial market efficiency: The financial markets activities are organised by normal human who are bounded rational as postulated in general behavioural choice theory of bounded rational theory (Simon, 1955). This perspective is also similar with the quasi rational theory (Russel and Thaler, 1985) applied in financial market context. This research draw contrast evidence to the modern finance assumption that market will be efficient due to the presence of rational institutional investors which will always off-set the presence of arbitrage opportunities. This evidence is in confirmation to the behavioural finance views that market is bounded and adaptively efficient. This conclusion is justified with the fact that in rational perspective, asset prices are unpredictable (moves in random) given any informations and the market offers no arbitrage opportunity to be exploited by the investors. Similar argument for Malaysian market has been presented in Tuyon and Ahmad (2016) and Ahmad et al. (2017a, b). *Awareness of behavioural risks:* Behavioural risks could be mitigated internally and externally. Internally, human behaviours including behavioural biases are products of human minds which are rooted from the brain activities (Barrett, 2009). Being aware is an indication that fund managers realise what these behavioural biases are, how they happen, and what their consequences are. Despite no knowledge on behavioural finance theory, majority of the fund managers are aware of the cause and effects of behavioural biases committed by them. Their knowledge on behavioural finance strategies have been possibly acquired through experience being a fund manager. *Bounded rationality of institutional investors:* Institutional investors (in this case, fund managers) being a normal human beings are naturally influenced by rational and irrational forces of human mind. This research provides confirming evidence to this ideology in the context of fund managers in Malaysia. Similar earlier evidence is discussed in Ahmad et al. (2017a, b). *Governance of behavioural biases:* Learning from theory and evidence of higher behavioural biases in Asian financial markets, the need for behavioural biases governance is important particularly for these markets. In the context of Malaysian market

as a focus of the current study, the need to govern behavioural risks in the fund management practice has been neglected. These claims can be substantiated by opinion from fund managers in this survey and absence of the same in the current scope of the Malaysian Code for Institutional Investors.

We extend the discussion on the survey and Delphi expert opinions concerning the possibility of *Dunning-Kruger effect*.¹² The Dunning-Kruger effect states that people unexperienced in a certain field or subject generally perceived themselves as having greater aptitude than in reality they do (Kruger and Dunning, 1999). The presence of such effect will cause bias to the survey results. The present survey is unlikely affected by such bias given the following justifications. In reference to Table 4, the respondents are the real fund managers/ chief investment officer/director with working experience ranging from 2 to 21 years. Many of them having postgraduate qualifications (Master/PhD/DBA/CFA/ other professional qualifications). These characteristics support the respondents' knowledge on the subject and quality of opinions given in the survey.

The needs to regulate behavioural biases have been stressed in Daniel et al. (2002) to mitigate the effects of irrational behaviour and imperfect markets. In this regards, they suggested two important issues for public policy. The first one is to help investors avoid mistakes (through education mechanism), while the second is to promote the efficiency of the markets (through policy mechanism). The same argument has been presented in Cunningham (2002) who suggested that investor governance could include investor education and market regulation. The need to incorporate behavioural finance ideology to corporate governance has also been promoted in Cunningham (2002) and Morck (2008) in line with emerging behavioural corporate governance theory (Westphal & Zajac, 2013). Some behavioural approach and cognitive mapping technique is suggested in Garoui and Jarboui (2014). The following conceptual framework (Figure 3) summarises the research findings and the proposal for the need to govern behavioural risks to protect fund performance and sustainability against negative impacts of behavioural biases. The basic premise of this behavioural biases governance framework is that behavioural biases could be governed through internal and external control mechanisms. Internal mechanisms include institutional investor's education and regulation related to behavioural biases. External mechanisms, meanwhile, are related to financial markets laws and policies to govern behavioural risks. The idea is referred from Daniel et al. (2002), Cunningham (2002), Suto and Toshino (2005), Li (2008), Morck (2008), Spindler (2011), and Kurniawan, How and Verhoeven (2016).

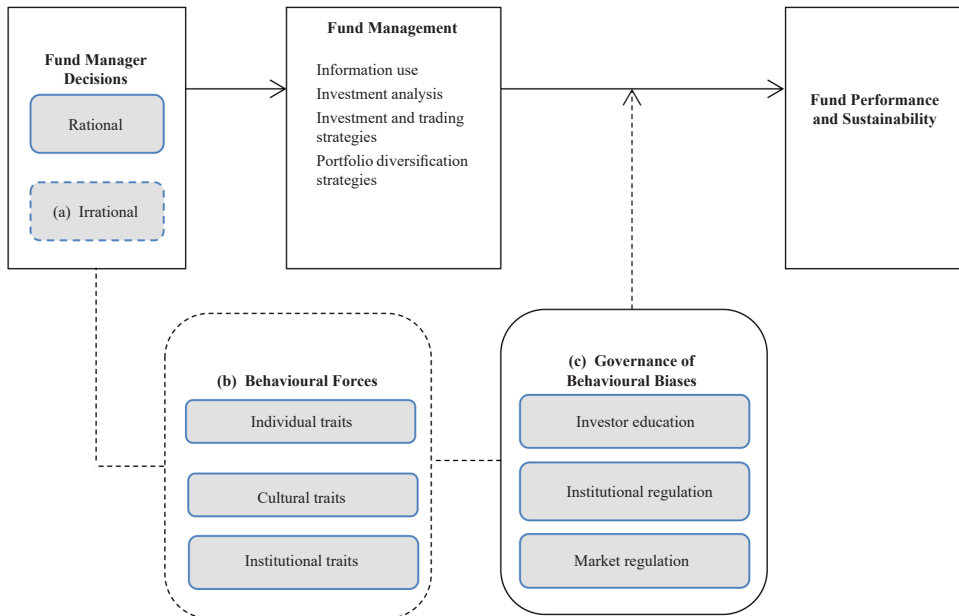


Figure 3. Conceptual framework of behavioural biases governance

Notes: This figure illustrates the connections of the two important themes discussed in this research; (i) How behavioural biases influence fund managers decision, which indirectly gives impacts on fund performance and sustainability, and (ii) How behavioural biases could be incorporated into the existing fund governance framework.

As discussed in the literature review part, fund manager, being a normal human being, is bounded rational in their decisions due to the influence of both rational and irrational elements in their thought and actions. Our attention is on the irrational part of human decision. The conceptual framework of irrational behaviour's origin, causes and effects is discussed in Ahmad et al. (2017a). To briefly recap the ideas here, the basic empirical model for the above conceptual framework can be represented as follow; *(Irrational behaviour) causes (Irrational investment decision) effects (Investment performance)*. The origin of behavioural biases can be deduced from theory of mind, which describes that human decision originates from two systems of thinking namely cognitive and affective systems. These systems induce both cognitive heuristics and affective biases (sentiment, emotion and mood) in human decisions. This theory complements bounded rational theory and prospect theory collectively in explaining the dynamic of human behaviour. The causes of irrational behaviour in inducing irrational investment strategies can be inferred from the ABC model, which postulates that behaviours are triggered by specific triggering external events.

In addition, the conceptual framework also acknowledges that human irrational behaviour differ from one individual to another. The heterogeneity of behavioural biases among individuals are induced by differences in individual, institutional, and cultural traits. The current research extends Ahmad et al. (2017a) work with the ideas that behavioural biases could be mitigated and they can be incorporated in the existing institutional fund governance framework. The suggestions on the governance of behavioural biases through investor education, institutional regulation, and market regulation are in line with the ideas advised by earlier scholars mentioned previously. Different with the existing research, we extend the ideas by providing linkages to (a) *irrational behaviour*, is due to (b) *behavioural forces*, and these provide theoretical and empirical supports to behavioural governance elements (c) *governance of behavioural biases*. This framework shed lights on the behavioural governance curiosity arise from the survey and Delphi opinions. Theoretical ideas on behavioural governance can be learn from the nudge theory. This theory stressed the need to govern choice architecture (physical, social, and psychological aspects of the contexts) that influences the individual behaviours. Similar to this ideology, the proposed conceptual framework also emphasize the behavioural forces (individual traits, cultural traits, and institutional traits) that determine individual behaviours. Accordingly behavioural governance intervention mechanisms could be initiated in these areas covering three aspects namely; investor education, institutional regulations, and market regulations). In investor education, the ideas is to educate the investors (institutional and retail) on various behavioural biases that are coming from the cognitive and affective biases of human minds. In institutional regulations, the institutional culture and the standard investment management operating procedures need to incorporate mechanisms to mitigate commitment of behavioural biases by fund managers. In market regulation, the existing financial market governance needs to be complemented with intervention mechanisms to mitigate excessive behavioural biases that could negatively impact the financial markets.

The practical value of the nudge theory to financial market governance has been acknowledged by the CFA UK's market integrity and professionalism committee (Radia, 2011). So far, the theory is just providing a descriptive perspective and no complete behavioural governance framework has been crafted. Complementary perspectives on behavioural governance intervention mechanisms could also be learned from the behavioural agency model (Wiseman & Gomez-Mejia, 1998), behavioural theory of the fund management firm (Holland, 2016), Islamic governance, and neuroethics research that collectively offer an interdisciplinary perspectives on the origin of behavioural biases in human decision and possible ways to govern behavioural biases in the financial institutions and markets.

CONCLUSION

This paper provides insights to the field of behavioural finance and aims to inform researchers, practitioners and regulators on the needs and ways to govern behavioural biases in fund management industry taking Malaysia as the case. The findings from this research suggest that behavioural biases are committed by fund managers with awareness on the source and repercussion. To date the profession and the policy makers have neglected the need to govern behavioural biases in the fund governance framework. This claim is supported by the current survey findings and expert endorsement in the Delphi method. In addition, this opinion can also be substantiated with the absence of behavioural risks consideration in the current institutional investor's governance framework. The research raises important questions about the needs to govern behavioural biases in fund management industry to protect the fund performance and sustainability against the negative effects of behavioural biases. Since the impact of behavioural biases in fund management industry is crucial to the investor's wealth, fund management institutions performance and sustainability, and the nation financial markets efficiency, we propose that it would be fruitful to pursue further research on how to incorporate governance of behavioural biases in the existing fund governance framework.

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NOTES

1. See Filbeck et al. (2005) for detail descriptions.
2. See Mayfield et al. (2008) for detail descriptions.
3. See Blais and Weber (2006) for detail of questions.
4. Hofstede's cultural indexes for the respective countries are obtained from <http://geert-hofstede.com/countries.html>. We obtained the relevant Hofstede's cultural index (i.e. individualism, uncertainty avoidance, and long-term orientation) for all countries covered in the 31 papers reviewed and clustered them on high and low points based on cut point index of 50 (i.e. <50 is low and >50 is high).

5. Governance Index is represented by the Worldwide Governance Indicators of the World Bank, obtained from <http://info.worldbank.org/governance/wgi/index.aspx#home>. The aggregate governance index is based on six broad dimensions of governance: *Voice and Accountability*, *Political Stability and Absence of Violence/Terrorism*, *Government Effectiveness*, *Regulatory Quality*, *Rule of Law*, and *Control of Corruption*. We obtained the Governance index (i.e. for 2013) for all countries covered in the 31 papers reviewed and clustered them on high and low points based on cut point index of 75 (i.e. <75 is low and >75 in line with World Bank definition).
6. The Malaysian Code for Institutional Investors is retrieved from https://www.sc.com.my/wp-content/uploads/eng/html/cg/mcii_140627.pdf
7. The Guidelines on Compliance Function for Fund Management Companies is retrieved from: https://www.sc.com.my/wp-content/uploads/eng/html/resources/guidelines/FundManagers/GuidelinesFundManager_170509.pdf
8. Details information and partial analysis of the survey is presented in Ahmad et al. (2017b).
9. The online questionnaire for Delphi experts is available at; https://docs.google.com/forms/d/1Z77CK_2ETrBbUkSAFFZQoInBknY3G_uHyFffYWITCbI/edit
10. <https://www.cfainstitute.org/community/membership/directory/Pages/index.aspx#section-1>
11. <https://plato.stanford.edu/entries/mental-representation/#Representational>
12. We thank the reviewer for highlighting this possibility.

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