

THE BEHAVIORAL BIASES OF MUSLIMS IN ISLAMIC
BANKING AND FINANCE:
A SECOND-ORDER SELF-REPORTED RELIGIOSITY
MEASUREMENT INVARIANCE

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Abstract

This study examines a measurement invariance of a second-order factor model of the behavioral biases in Islamic banking and finance activities among Muslims in Malaysia. Data elicited via a survey questionnaire was subjected to structural equation modeling analysis using the Amos 23.0 software. The study revealed that behavioral biases as a second-order factor is indicated by herding, cognitive dissonance, anchoring, regret aversion and overconfidence of first-order factors. Measurement invariance was tested based on self-reported religiosity across a number of hierarchically structured invariance analysis models, including configural at the first-order level, metric, intercepts, and residuals at both the first-order and second-order levels. A significant variance was observed between the high and low self-reported religiosity groups. However, no difference was observed between the two groups and the 'moderate' self-reported religiosity groups. Furthermore, based on the critical ratio score of statistical significance at alpha of 0.001, the latent mean difference tests of the second-order model indicates statistical significance across groups based on a path-by-path analysis.

Keywords: psychological biases, measurement invariance, Islamic banking, Islamic finance, second-order factor.

Introduction

Notwithstanding the enormous growth and potentials of the Islamic banking and finance industry, subjecting its discourse for improvement to the orthodox economic theories and assumptions, though appropriate, may not necessarily be sufficient. This is because it is likely that much emphasis would be placed on the operation of Islamic banking and finance as though the theoretical foundation that underlies its essence can be taken as given from the conventional point of view. From a purely orthodox conventional economics point of view, what constitutes as success on an economic level is construed differently. This may make a devout Muslim's banking and financing behavior appear irrational when viewed with the conventional banking and financing lenses. Whereas, a Muslim's activities including '*muamalat*' – economic transactions - in its entire ramifications is primarily guided by divine revelations and secondarily by reason. As stated in the Holy Quran 6, verse 62, a Muslim's entire activity is solely to please Allah (ﷻ). It may not be unexpected, therefore, that the way a Muslim conducts his Islamic banking and financing activities is moderated by his religious belief and inclination whose purpose is to achieve success both in this world and in the hereafter as mentioned in numerous verses of the Holy Quran.¹

Interestingly, even from the conventional point of view, there are arguments being made on to what extent human economic activities can be subjected to the so called rational economic utility maximizing assumptions. Since the pioneering study by Tversky and Kahneman², behavioral finance, a fusion of sociology, psychology, and finance has attracted commendable research interests among scholars and practitioners alike. Such attraction is arguably more of a function of design rather than happenstance hinged on the emerging realization of the overstretched theoretical assumptions and to some extent contestable mechanical empiricism on which an individual's

¹ See for instance: Al-Qur'an 59:20, 3: 185, 91:9-10, 11:88, and Al-Qur'an 103.

² A. Tversky, and D. Kahneman, "Judgment Under Uncertainty: Heuristics and Biases. Science," 185 (4157), accessed <http://www.sciencemag.org/content/185/4157/1124.short>.

banking and financing behavior is grounded.³ The limitation of the modern finance theories to explain banking and financing behavior is advertised by the fact that focus is placed on market efficiency contingent on the relative availability of and access to financial information. This is often than not at the expense of the equally if not arguably more important biases⁴ that shape banking and financing behavior.⁵

According to Credit Suisse, Thorsten and Meier⁶, orthodox finance makes it appear as if financial decisions are correctly taken, taking into account available objective and quantitative statistical optimization and mathematical operationalization based on established sophisticated models. However, the reality is that most such decisions are based on behavioral finance. Nofsinger⁷ and Credit Suisse et al⁸ thus conclude that the financial decision process that individuals go through is cyclical in nature and comprises a number of sequential chains of interrelated decisions that are susceptible to pitfalls mainly due to an individual's behavioural biases, emotions, and cognitive errors.

³ G. Muradoglu, and N. Harvey, "Behavioural Finance: The Role of Psychological Factors in Financial Decisions", *Review of Behavioural Finance*, Vol. 4 Iss: 2, 72, (2012); R. Boussaidi, (2013). "Representativeness Heuristic, Investor Sentiment and Overreaction to Accounting Earnings: The Case of the Tunisian Stock Market." *Procedia - Social and Behavioral Sciences*, 81, (2013); V. Nienhaus, "IFSB Working Paper on Financial Consumer Protection in Islamic Finance." IFSB Working Paper Series WP-03/10/2015, (2015), 11.

⁴ Psychological bias can be broadly categorized into cognitive bias and emotional bias. While the former reflects investment and financing decisions based on a rule of thumb that may not necessarily be factual, the latter reflects investment and financing decisions based on feelings rather than facts.

⁵ Subash, R. (2012). *Role of Behavioral Finance in Portfolio Investment Decisions: Evidence from India*. Charles University. Retrieved from <http://ies.fsv.cuni.cz/default/file/download/id/20803>; Nofsinger, (2014). Nofsinger, J. R. (2014a). *The Psychology of Investing*. New York: Pearson Education, Inc.

⁶ Credit Suisse, H. Thorsten, and A. Meier, "Behavioral Finance: The Psychology of Investing". Finance White Paper, *Credit Suisse Securities (USA) LLC*. 1-48, (2015), 2.

⁷ J. R. Nofsinger, *The Psychology of Investing*. (New York: Pearson Education, Inc. 2014a).

⁸ Credit Suisse, H. Thorsten, and A. Meier, "Behavioral Finance: The Psychology of Investing," 3.

Commendable as the studies on behavioral finance may seem, not taking into consideration the relative implication of norms such as culture and religion for banking and financing behavior as argued by Akerlof⁹ may impede a proper understanding of the micro-foundation underpinning macroeconomic analysis. For instance, some recent studies have proven that a person's religion to a reasonable extent also moderates financial behavior across various dimensions of cognitive biases¹⁰, while the same effect is noted for cultural diversity.¹¹ Taking both culture and religion as conjoint, studies like Cohen¹², Williard and Norenzayan¹³ argue that cultural learning resulting from living in an area with a predominant religious belief, for instance in the case of Malaysia, Islam may have great implication for various covert and overt psychological biases. These biases shape and gravitate the human mind towards religious considerations in decision-making in its entire ramifications, especially economic decisions.¹⁴

In the specific context of Muslims, not only were they found to be risk-averse and bound by religious permissibility rather than financial considerations¹⁵, such non-financial attributes like beliefs and practices were also found to be uppermost in their investing and

⁹ A. George Akerlof, "The Missing Motivation in Macroeconomics", *American Economic Review*. 97(1): 5–36. (2007), 8.

¹⁰ Luc Renneboog, and Christophe Spaenjers (2012). "Religion, Economic Attitudes, and Household Finance," *Oxford Economic Papers*. 64 (1), (2012), 105; Zanariah Alam, Che Wel, & Ahsan, "Is Religiosity an Important Factor in Influencing the Intention to Undertake Islamic Home Financing in Klang Valley?" *World Applied Sciences Journal*. 19 (7): (2012), 1035; A. K. Leon, & C. Pfeifer, "Religious Activity, Risk Taking Preferences, and Financial Behaviour: Empirical Evidence from German Survey Data." (Paper presented at Univeristy of Luneburg Working Paper Series in Economics No. 269, (2013), 4.

¹¹ Credit Suisse, H. Thorsten, and A. Meier, "Behavioral Finance: The Psychology of Investing," 5.

¹² A. B. Cohen, "Many Forms of Culture". *American Psychologist*, 64 (3), (2009), 2.

¹³ A. K. Willard, & A. Norenzayan, "Cognitive Biases Explain Religious Belief, Paranormal Belief, and Belief in Life's Purpose." *Cognition*. 129, (2013), 3.

¹⁴ K. Leon, & C. Pfeifer, "Religious Activity..." 5; V. Nienhaus, "IFSB Working Paper on Financial Consumer Protection in Islamic Finance." (Paper presented at *IFSB Working Paper Series* WP- 2015, 41).

¹⁵ K. Leon, & C. Pfeifer, "Religious Activity..." 6.

financing considerations.¹⁶ Furthermore, from a religious perspective, Nienhaus¹⁷ in line with the arguments in Omar Farook¹⁸ noted that there maybe a need to distinguish between *Homo economicus* and *Homo Islamicus* given that they both have different fundamental economic inclinations.¹⁹ It is thus safe to assume that from a purely *Homo economicus* perspective, a Muslim's decision expectedly bound by Islamic tenets and ethical considerations may be irrationally construed, especially when viewed from a non-Islamic perspective.²⁰

This study focuses on the Islamic banking and financing activities of Muslim individuals in Malaysia. Without prejudice to the fact that both individuals and institutional investors are prone to making financial decision mistakes²¹ noted that the former had overtime been labelled as perennial bad market timers. As stated in Li, Wang, and Rhee²², plausible reasons could be that individuals are often less informed and highly susceptible to the influences of psychological biases, market sentiments, and attention-grabbing events. In addition, the recent interest of behavioral finance researchers to shift from the usual focus on what orthodox finance considers rational investment acts to the irrational investment acts seems more apposite when situated in the context of the individual decision makers and what norms drive such acts.²³

¹⁶ I. Tahir, "Determinants of Investment Behaviour." (Ph.D Dissertation, Griffith University, 2004), 2.

¹⁷ V. Nienhaus, "IFSB Working Paper on Financial..." 25.

¹⁸ Omar Farooq, "Self-Interest, Homo Islamicus and Some Behavioral Assumptions in Islamic Economics and Finance." *International Journal of Excellence in Islamic Banking and Finance*, Vol. 1, No. 1, 52-79, (January 2011), 2.

¹⁹ Although from a purely practical point of view, Omar Farook (2011) and Asutay (2007) contend that both *Homo economicus* and *Homo Islamicus* tend to converge.

²⁰ S. A. Rosly, *Critical Issues on Islamic Banking and Financial Markets (First Edition)*. (Kuala Lumpur: Dinamas Publishing, 2005), 4.

²¹ R. J. Shiller, R. J. *Irrational Exuberance (3rd ed.)*. (New Jersey: Princeton University Press, 2015), 2; J. R. Nofsinger, "The Psychology..." 2.

²² Wei and Wang Li, Steven Shuye and Ghon Rhee, "Differences in Herding: Individual vs. Institutional Investors," (Paper presented at Asian Finance Association (Asian FA) February 14, 2015), 3.

²³ V. Nienhaus, "IFSB Working Paper on Financial..." 6.