



Moderating roles of external locus of control and knowledge expertise on the relationship between superstitious belief and stock trading performance

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Abstract

The role of superstitious beliefs on stock trading performance was explored. Survey data were collected from 226 respondents, consisting of independent stock traders who attended a national investment fair in Bangkok ($n = 145$) and professional stock traders at two leading financial institutions in Thailand ($n = 81$). The respondents were obtained through convenience sampling. The results from partial least squares regression analysis showed that the contribution of superstitious beliefs on stock trading performance was strongly moderated by the external locus of control and knowledge expertise in stock investment that individuals exhibited. In particular, the positive association between superstitious beliefs and stock trading performance only presented in individuals with a high external locus of control, but for those with a low external locus of control, higher superstitious beliefs were associated with lower trading performance. Moreover, the positive association of superstitious beliefs only presented in those with high knowledge expertise in stock investment; for those with low knowledge expertise in stock investment, more superstitious beliefs lowered trading performance. The overall findings support the role of superstitious beliefs in helping individuals enhance confidence and a sense of control. However, superstitious beliefs can be harmful when individuals just cling onto it but do not develop sufficient knowledge and skills that are more important for them to achieve the desired goal. In this case, superstitious beliefs may be nothing more than “blind faith” that rarely brings sustainable success to individuals.

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Introduction

Extant studies have documented that superstitious beliefs have been widely witnessed in many areas, such as in sports (Bleak & Frederick, 1998; Schippers & Van Lange, 2006; Womack, 1992), gambling (Joukhador, Blaszczynski, & Maccallum, 2004), and consumer behavior (Carlson, Mowen, & Fang, 2009; Hernandez, Wang, Minor, & Liu, 2008). However, only a few researchers have focused on the role of superstitious beliefs in the area of stock trading. For example, a study by Bhattacharya, Kuo, Lin, and Zhao (2016) targeting investors in the Taiwan Futures Exchange found that superstitious traders tended to demonstrate more trading losses due to bad market

timing and stale orders. Lepori (2009) also showed that the occurrence of negative superstitious events such as eclipses was associated with below-average stock returns. In order to provide extra evidence, this research investigated the link between the superstitious beliefs and stock trading performance of people in Thailand. In particular, Thailand is a suitable context to study superstitions due to the pervasiveness of superstitious beliefs that have been deeply involved in the way of life of Thai people throughout the country's long history until today. In any case, although there is a wide array of superstitious beliefs in Thailand, this research focused on the superstitious beliefs that received influence from religion and are considered common practices that are widely embraced by the majority of Thai people as an integral part of the culture.

The main objective of this study was to investigate some underlying conditions that might explain the influence of superstitious beliefs on stock trading performance. In particular, this is a crucial topic for investigation in Thailand which is a country where many people tend to put a lot of faith in superstition hoping it will bring them good fortune. Yet,

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whether a correlation between superstitious beliefs and outcomes associated with such beliefs is absolute or is actually explained by some other underlying factors is an issue that needs scientific support to provide insight for people in society. In fact, scholars have suggested that the causal link between superstitious practices and outcomes that individuals receive is inherently vague (Langer, 1975; Schippers & Van Lange, 2006; Shermer, 2002). However, in the current research, the author has argued that the contribution of superstitious beliefs to stock trading performance is not absolute, but it is contingent on the personal characteristics of the individuals who develop superstitious beliefs. In particular, two characteristics that might influence the benefits that individuals will obtain from superstitious beliefs are proposed in this study: (1) an external locus of control and (2) knowledge expertise in stock investment that individuals possess. By using research on positive illusion and illusion of control as a theoretical foundation (Langer, 1975; Taylor & Armor, 1996), the study postulated that although superstitious beliefs may provide some benefits to individuals who lack a sense of control, those individuals still need to have adequate knowledge to be successful in the task they perform. The results from the present study will provide additional insight into the role of superstitious beliefs in a modern world. This research will also offer useful implications for society, especially in Thailand, where superstitious beliefs are widely adopted.

Literature Review

Theories

In particular, positive illusion (Taylor & Armor, 1996) and illusion of control (Langer, 1975) are two related theoretical frameworks that explain a tendency to adopt superstitious beliefs. Firstly, the theory of positive illusion proposed by Taylor and Armor (1996) posits that when individuals are faced with a stressful situation they often respond with mildly distorted positive perceptions of themselves, an exaggerated sense of personal control, and an overly optimistic expectation about the future. Because negative events are perceived as a threat to positive assessments of perception of personal control, individuals tend to take active efforts to restore it by forming a belief that they have control over at least some aspects of that event (Taylor & Armor, 1996). This perspective is consistent with the concept of Langer (1975) concerning “illusion of control” which is regarded as one type of positive illusion. Langer (1975) suggested that individuals tend to believe that they can control or at least influence outcomes which they clearly cannot. In this regard, individuals tend to behave as if they could exercise control in a chance situation where the exercise of skill or radical decision making is required (Langer, 1975). Basically, both positive illusion and control illusion can serve as an adaptive coping strategy that individuals use for helping them overcome perceived uncertainty in their surroundings and to facilitate psychological adjustment (Taylor & Armor, 1996; Wiseman & Watt, 2004). In this regard, individuals who lack confidence that they have sufficient capabilities required to be successful in their life are more likely to depend on superstitions as a means to help them overcome their perceived weaknesses.

Role of superstitious beliefs in stock trading

Skinner (1948) argued that superstitious beliefs tend to arise through conditions. Schippers and Van Lange (2006) argued that individuals tend to engage in superstitious beliefs when they encounter a situation characterized by uncertainty, and the degree of superstition will become stronger when the expected outcomes are considered very important to them.

Keinan (2002) and Bleak and Frederick (1998) found that superstitious beliefs tend to prevail when individuals are under stress and have a desire for control. Because the nature of stock investment usually involves high uncertainty from hard-to-predict economic conditions and stock price movements, all of which inevitably expose stock traders to the risks of financial gain and loss, it is not uncommon that superstitious beliefs play a significant role for some stock traders.

However, this research proposes that the benefits of superstitious beliefs on stock trading performance will be contingent on some characteristics of individuals. First, the benefits of superstitious beliefs in stock trading performance might be contingent on the external locus of control that an individual exhibits. Generally, an external locus of control reflects the beliefs that the outcomes are determined by other factors that are beyond their control, such as fate or luck. In fact, because individuals with a high external locus of control tend to attribute success to external sources such as luck or chance instead of own competencies, this characteristic can pose a significant obstacle for individuals to make money from stock. In particular, when people strongly believe that outcomes in life are determined by external factors, they may not be willing to develop their skills and competencies to overcome obstacles or to enhance their skills to accomplish their task (Wang, Bowling, & Eschleman, 2010). Whether individuals gain or lose money in stock, they attribute it to good or bad fortune. Having this propensity may preclude individuals from examining and justifying what are the key reasons that truly determine their performance and what they can do to improve them. Moreover, although these individuals exhibit appropriate knowledge in stock investment, a belief that outcomes in life are predefined and influenced by fate may discourage individuals from taking appropriate risk or making decisive judgments in stock trading. In this sense, resting the outcomes passively on fate and luck will rarely make individuals succeed in the stock market.

Although an external locus of control can be an obstacle for stock traders to make money in the stock market, it is possible that superstitious beliefs play a positive role in helping individuals suffering from this disposition to improve stock trading outcomes. As mentioned earlier that an external locus of control can stall individuals from taking appropriate risks and making sound judgments in stock trading, the role of superstitious beliefs in this sense is to help those individuals develop more confidence in their stock trading decisions. In particular, because those with an external locus of control tend to have a strong belief in the power of external forces that will influence success, a strong faith that individuals have toward the positive outcomes that will be granted by superstitious beings can serve as a sense of control that motivates these individuals to take risk and be more confident in their trading decisions, and that can increase their chances to perform better in stock trading. Therefore, the following hypothesis is presented:

Hypothesis 1: The relationship between superstitious beliefs and stock trading performance is positively moderated by an external locus of control.

Although the author previously proposed that superstitious beliefs can make individuals develop more confidence and enhance their sense of control required to increase their chances of achieving better stock trading performance, it is necessary to accept the reality that just having self-confidence in stock trading is not a sufficient condition for individuals to make money in the stock market. The most important thing that will truly determine success in the stock market is the level of knowledge in stock investment that allows individuals to make sound decisions in stock trading. Therefore, the level of knowledge expertise in stock investment that individuals

possess is proposed as the essential factor that will lead them to succeed in the stock market. Knowledge expertise in stock investment encompasses several key aspects. For example, individuals need to have the skills to perform market research, to analyze the financial information of the companies to invest in, to keep track of economic news and market situations, and the like. Generally, these aspects of knowledge expertise are crucial for individuals to pick the good fundamental stocks with the right timing, and that will yield a higher chance for them to maximize profit and minimize risk in stock trading.

Given the crucial role of knowledge expertise in helping to increase the chances of achieving superior stock trading performance, the study proposes that superstitious beliefs will only help individuals achieve this goal if and only if individuals already possess a sufficient level of knowledge expertise in stock investment. In this case, superstitious beliefs can provide additional benefits in helping individuals to develop more confidence in their decision making, which will eventually maximize their chances of success. However, for those who lack sufficient knowledge in stock investment, a strong belief in superstitions not only offers no benefit but can also be detrimental to them. In fact, it is dangerous when individuals regard a supernatural power as a silver bullet that will grant them every wish. Crucially, when individuals hope that a superstitious power will help bring success in stock trading but they personally do not exhibit adequate knowledge in this area of investment, it fundamentally is not different from gambling (Langer, 1977; Langer & Roth, 1975). Theoretically, this view can be supported by literature on positive illusion and illusion of control which suggests that although perceived control can help increase confidence and performance, it can lead to negative consequence in circumstances where control is indeed not objectively possible such as in stock trading (Fenton-O'Creevy, Nicholson, Soane, & Willman, 2003; Gollwitzer & Kinney, 1989). In particular, Fenton-O'Creevy et al.

(2003, p. 55) asserted that illusion belief about control can be counterproductive to sound decision making because it “may cause insensitivity to feedback, impede learning, and predispose toward greater objective risk taking.” In this case, superstitious beliefs can eventually lower the chances of individuals to succeed in stock trading. Hence, this argument leads to the second hypothesis:

Hypothesis 2: The relationship between superstitious beliefs and stock trading performance is positively moderated by knowledge expertise in stock investment.

Methods

Sample and data collection procedure

Participants in this research were independent stock traders and professional stock traders whose work was related to investment (such as brokers and analysts). The data were collected through self-administered questionnaire surveys. A nonprobability sampling technique was used for sample selection. For the samples who were independent stock traders, data were collected, using convenience sampling involving people who attended the Stock Exchange of Thailand-Thailand Future Exchange Online Investor Fair held June 26–29, 2014. This fair was selected for data collection due to the chance to gain access to a large group of stock traders. The questionnaires were distributed randomly in the fair by two research assistants. After the fair, 145 useable surveys were obtained. Professional stock traders were sampled by distributing the questionnaires to brokers, traders, and analysts at two leading financial institutions in Thailand. In total, 81 usable surveys were received from this sample group so that 226 questionnaires were obtained from both groups of stock traders. Demographic and stock trading characteristics of the sample are summarized in Table 1.

Table 1
Demographic and trading characteristics of samples

Variable		Total sample (n=226)	Independent stock traders (n=145)	Professional stock traders (n=81)
Gender	Male	124 (55%)	83 (57.2%)	41 (50.6)
	Female	102 (45%)	62 (42.8%)	40 (49.4)
Age (years)	Minimum	18	18	20
	Maximum	62	62	52
	Mean	29.48	29.014	30.309
	Standard deviation	8.29	8.609	7.692
Finance-related educational background	Yes	87.55 (39%)	35 (24.1%)	52 (64.2%)
	No	139 (61%)	110 (75.9%)	29 (35.8%)
Educational level	Below bachelor's degree	27 (12%)	21 (14.5%)	6 (7.4%)
	Bachelor's degree	149 (66%)	98 (67.6%)	51 (63%)
	Master's degree	50 (22%)	26 (17.9%)	24 (29.6%)
	Doctoral degree	0 (0%)	0 (0%)	0 (0%)
Trading experience (year)	Less than 1 year	53 (23%)	39 (26.9%)	14 (17.3%)
	1 years	47 (21%)	40 (27.6%)	7 (8.6%)
	2 years	39 (17%)	27 (18.6%)	12 (14.8%)
	3 years	32 (14%)	24 (16.6%)	8 (9.9%)
	4 years	6 (3%)	3 (2.1%)	3 (3.7%)
	5 years	8 (4%)	3 (2.1%)	5 (6.2%)
	6 years	6 (3%)	0 (0%)	6 (7.4%)
	7 years	5 (2%)	1 (0.7%)	4 (4.9%)
	8 years	5 (2%)	2 (1.4%)	3 (3.7%)
	9 years	2 (1%)	1 (0.7%)	1 (1.2%)
	10 years	9 (4%)	4 (2.8%)	5 (6.2%)
	More than 10 years	14 (6%)	1 (0.7%)	13 (16%)
Investment horizon	Short-term	68 (30%)	38 (26.2%)	30 (37%)
	Middle-term	118 (53%)	79 (54.5%)	39 (48.1%)
	Long-term	39 (17%)	28 (19.3%)	12 (14.8%)

Measures

Stock trading performance was measured by asking respondents to identify the level of gain/loss they made. Performance was measured in the long, middle, and short term. Long-term performance covered a period of one year, whereas short-term and middle-term performance covered a period of three months and six months, respectively. They were measured using ordinal scale ranges of 1 (more than 30 percent loss), 2 (26–30 percent loss), 3 (21–25 percent loss) 8 (breakeven) 13 (21–25 percent gain), 14 (26–30 percent gain), and 15 (more than 30 percent gain). Stock trading performance was measured as an ordinal variable because some respondents may not have remembered their stock returns exactly or did not want to reveal their actual stock returns; therefore, using ordinal measurement was appropriate (Rea & Parker, 2014). Because the analysis showed that these three measures correlated strongly with one another, they were then used as the indicators to construct a single reflective latent variable for the stock trading performance construct.

Although there are preexisting measurement scales of superstitious traits and beliefs (Carlson et al., 2009; Hernandez et al., 2008; Wiseman & Watt, 2004), these scales were developed to capture the superstitious beliefs of people in specific countries; therefore, they cannot be applied universally due to differences in superstitious beliefs that vary from culture to culture. Consequently, the current research developed a scale to capture superstitious beliefs that are unique in the Thai culture. The scale comprised five superstitious practices. Respondents were asked to rate the degree of importance they placed on each aspect of superstitious practices in their daily life: (1) believing in the horoscope and fortune telling, (2) engaging in superstitious rituals to overcome (enhance) bad (good) *karma*, (3) praying to spiritual and supernatural beings to ask for achievement and/or luck, (4) choosing to perform important tasks during auspicious dates and times, and (5) collecting and/or carrying amulets. These questions were rated using a Likert scale ranging from 1 (not important) to 5 (very important).

The external locus of control was measured by a chance control scale developed by Levenson (1973). Sample items include “*When I get what I want, it’s usually because I’m lucky*” and “*It’s not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.*” These questions were rated using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Knowledge expertise in stock investment was adopted from a scale developed by Chu, Im, and Lee (2014). It was measured considering four attributes: (1) level of interest in keeping up with financial reports, (2) level of searching for information related to stock investment, (3) level of involvement in attending lectures on stock investment, and (4) level of understanding of financial articles in newspapers. They were measured using a Likert scale ranging from 1 (very low) to 5 (very high).

The following demographic factors were measured: age in years, gender as a dummy variable (male was coded 1; female was coded 0), and education was coded on an ordinal scale ranging from 1 (below bachelor’s degree) to 4 (doctoral degree).

Six control variables that might determine stock trading performance were incorporated in the analysis: (1) stock trading experience, (2) educational background related to finance, (3) whether a respondent was a professional trader, (4) investment horizon, and the degree to which (5) fundamental analysis and (6) technical analysis were used to guide trading decisions. Stock trading experience was

measured by the number of years that a respondent had traded stock. A professional trader was coded as a dummy variable (YES was coded 1; NO was coded 0). Educational background related to finance was coded as a dummy variable (YES was coded 1; NO was coded 0). Investment horizon was coded on an ordinal scale (1 = short-term, holding stocks within a range of few days to few weeks; 2 = middle-term, holding stocks within a range of few months; 3 = long-term, holding stocks one year or more), whereby a higher score indicated a longer investment horizon. The extent to which a respondent relied on fundamental analysis and technical analysis in trading was measured using a Likert scale ranging from 1 (never) to 5 (always).

Data analysis

Partial least squares (PLS) regression was selected as a statistical tool to analyze the data. The analysis allowed multiple hypotheses to be assessed simultaneously while also enabling the use of reflective scales. It also permitted the simultaneous assessment of both measurement and structural models. Through the PLS algorithm, factor scores of the latent variables (stock trading performance, superstitious beliefs, external locus of control, and knowledge expertise in stock investment) were estimated by an iterative procedure using three different weighting schemes: centroid, factorial, and path weighting (Monecke & Leisch, 2012). It has been suggested that PLS regression can provide more robust estimates than ordinal least squares regression under the condition of non-normally distributed data and small sample size (Tobias, 1997). In particular, PLS regression is appropriate for data that are not normally distributed and from a small sample size (Kline, 2005). Because the results from the Jarque-Bera test of normality indicated that all variables except for the external locus of control and education were not normally distributed, PLS regression was therefore suitable for this research. PLS analysis was performed using WarpPLS version 4.0.

Results

The measurement model was assessed before PLS estimations. First, convergence validity was assessed using factor loadings. The results indicated that all factor loadings were above the .5 minimum requirement as suggested by Hair, Black, Babin, and Anderson (2009). Second, discriminant validity was assessed by comparing the average variance extracted (AVE) and the squared correlation coefficient. Fornell and Larcker (1981) suggested that the square root of the AVE must be greater than the correlations between the constructs in order for discriminant validity to exist. The results, as shown in Table 2, satisfy this requirement. All AVEs were also greater than .5 as recommended by Bagozzi and Yi (1988). Third, construct validity was assessed using Cronbach’s alpha coefficient and the composite reliability coefficient, where the minimum requirement for these two indicators is .7 (Nunnally, 1978). The results (Table 2) showed that the reliability indicators of all latent variables were higher than this threshold.

The test of multicollinearity among the indicators was performed using the full variance inflation factor (VIF) statistics. In particular, the full VIF test is more robust than the traditional VIF test because it allows lateral and horizontal collinearity to be evaluated simultaneously. Petter, Straub, and Rai (2007) recommended that full VIF should be lower than 3.3. The analysis indicated that the maximum full VIF was 2.116, which was satisfactory. Figure 1 presents the results from PLS estimation.

The dataset was standardized automatically by the software, yielding the variables that had a zero mean and unit variance. Hypothesis 1 predicted that the external locus of control will positively moderate the relationship between superstitious beliefs and stock trading performance. The analysis showed that the interaction term between superstitious beliefs and the external locus of control was positive and statistically significant ($\beta = .097$; $p = .04$). This suggested that the effect of superstitious beliefs on stock trading performance was stronger for those with a high external locus of control. Therefore, hypothesis 1 was supported.

Hypothesis 2 predicted that information expertise will positively moderate the relationship between superstitious beliefs and stock trading performance. The analysis showed that the interaction term between superstitious beliefs and information expertise was positive and statistically significant ($\beta = .17$; $p = .001$). This suggested that the effect of superstitious beliefs on stock trading performance was strong for those with high knowledge expertise. Therefore, hypothesis 2 was supported.

The only control variables that were significantly associated with stock trading performance were trading experience ($\beta = .2$; $p < .001$) and use of fundamental analysis in trading ($\beta = .15$; $p = .004$).

Table 2

Measurement items, factor loadings, and reliability coefficients

Measurement item	Factor loading	Cronbach's alpha coefficient	Composite reliability coefficient
Stock trading performance			
Three-month return	.832	.851	.91
Six-month return	.917		
One-year return	.883		
Superstitious beliefs			
Believing in horoscope and fortune telling	.824	.906	.93
Engaging in superstitious rituals to overcome (enhance) bad (good) <i>karma</i> ,	.897		
Praying to spiritual and supernatural beings to ask for achievement and/or luck	.861		
Choosing to perform important tasks during auspicious dates and times	.833		
Collecting and/or carrying amulets	.848		
Knowledge expertise in stock investment			
Level of interest in keeping up with financial reports	.844	.826	.885
Extent to which respondent searches for information related to stock investment	.836		
Extent to which respondent is involved in attending lectures on stock investment	.729		
Level of understanding of financial articles in newspapers	.832		
External locus of control			
To a great extent my life is controlled by accidental happenings	.797	.855	.896
Often there is no chance of protecting my personal interests from bad happenings.	.780		
When I get what I want, it's usually because I'm lucky	.875		
It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune	.747		
Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.	.778		

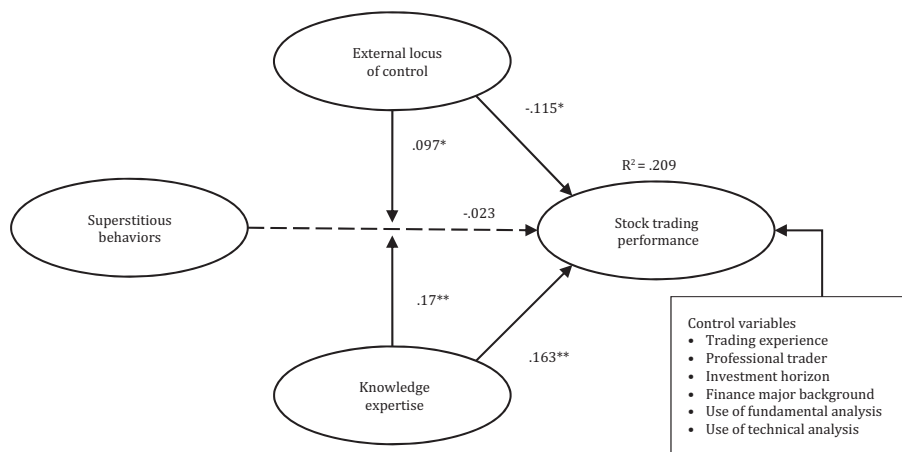


Figure 1 PLS results

Notes: * $p < .05$, ** $p < .01$

Standardized coefficients are reported;

Solid lines represent statistically significant paths

Figure 2 presents the regression lines, created using the WarpPLS software, that illustrate the relationship between superstitious beliefs and stock trading performance in different groups of sample (characterized by high/low levels of the external locus of control and knowledge expertise in stock investment). The medium of the standardized variable was used as a cut-point. Overall, these illustrations clearly confirmed that the benefits of superstitious beliefs on stock trading performance were strongly contingent on the personal characteristics of individuals as predicted in the hypotheses.

Discussion

General discussion and research contributions

The main objective of this research was to investigate the role of superstitious beliefs on stock trading performance. More importantly, the results from the present study provided extra contribution to the extant literature on the role of superstitious beliefs in the modern world (George & Sreedhar, 2006; Schippers & Van Lange, 2006). In particular, statistical evidence obtained from PLS analysis did not support that superstitious beliefs absolutely affect stock trading performance. Instead, the role of superstitious beliefs was strongly moderated by the external locus of control and knowledge expertise of stock traders. Superstitious beliefs were only associated with better stock trading performance for individuals who had a high external locus of control and those with superior knowledge expertise in stock investment. However, for those with low external locus of control and those who had inferior knowledge expertise in stock investment, having stronger superstitious beliefs tended to worsen stock trading performance.

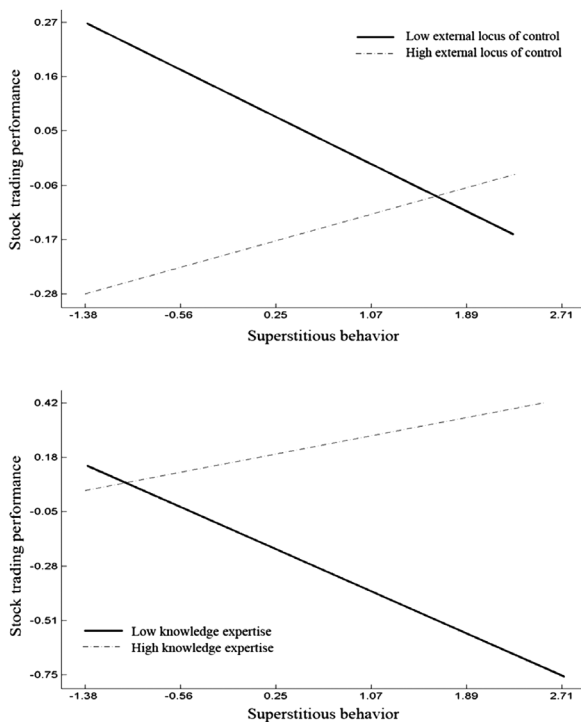


Figure 2 Moderating effects of external locus of control and knowledge expertise

Table 3
Correlations among variables and discriminant validity indicators

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Stock trading performance	(.878)												
2. Superstitious beliefs	-.066 (.853)	(.878)											
3. Knowledge expertise	.043 (.812)	.26**	(.812)										
4. Trading experience	.246** (.812)	.291**	.246** (.812)	(.812)									
5. Professional trader	.152* (.812)	.168*	.413** (.812)	.246** (.812)	(.812)								
6. Finance background	.395** (.812)	.161*	.152* (.812)	.246** (.812)	.413** (.812)	(.812)							
7. Investment horizon	.117 (.812)	-.056	.091	.041	.091	.117 (.812)	(.812)						
8. Fundamental analysis	.054 (.812)	-.083	.223**	.487**	.041	.117 (.812)	.054 (.812)	(.812)					
9. Technical analysis	.46** (.812)	.003	.263**	.393**	.33*	.395** (.812)	.46** (.812)	.46** (.812)	(.812)				
10. External locus of control	-.061 (.797)	.498**	.22**	.08	.22**	.306**	.27**	.27**	.27**	(.797)			
11. Age	-.185** (.812)	.145*	.087	.087	.087	.129	.129	.129	.129	.129	(.812)		
12. Male dummy variable	.015 (.812)	-.147*	-.011	-.011	-.011	-.064	-.064	-.064	-.064	-.064	.015 (.812)	(.812)	
13. Education	.037 (.812)	-.064	-.032	-.032	-.032	-.032	-.032	-.032	-.032	-.032	.037 (.812)	.037 (.812)	(.812)

Notes: * $p \leq .05$, ** $p \leq .01$

Square roots of AVEs are shown in parentheses.

Overall, these results provided additional support to previous research regarding the outcomes associated with superstitious beliefs in stock trading (Bhattacharya et al., 2016; Lepori, 2009). Statistical analysis confirmed that the contribution of superstitious beliefs on outcomes was contingent upon some individual characteristics. In particular, the results regarding the positive contribution of superstitious beliefs on stock trading performance for those with a high external locus of control were consistent with previous studies that proposed that the role of superstitious beliefs tended to be prominent under situations characterized by uncertainty (Schipper & Van Lange, 2006) and when individuals were under stress and had a strong desire for control (Keinan, 2002). In particular, stock trading falls into these conditions because it involves risks related to financial gain and loss that individuals have to undertake when they trade stocks. That is why superstitious beliefs exert a positive influence on stock traders who lack confidence and need more sense of control to make a profitable trade. The findings about the moderating effect of external locus of control on the link between superstitious beliefs and stock trading performance provided additional support to the literature that found that a locus of control was among the key conditions that encouraged individuals to adopt superstitious beliefs to compensate for their perceived weaknesses (Bleak & Frederick, 1998). They also provided support to the argument that the consequences from superstitious beliefs tended to depend on individual differences (Kramer & Block, 2007).

In addition to the moderating effect of the external locus of control that influenced the positive outcome associated with superstitious beliefs, another key factor that significantly moderated the contribution of superstitious beliefs was knowledge expertise in stock investment that individuals possess. For the group of stock traders who had superior knowledge in stock investment, higher superstitious beliefs increased trading performance. On the other hand, for the group of stock traders who did not have sufficient knowledge in stock investment, more superstitious beliefs eventually resulted in lower stock trading performance. These findings provided additional support to prior research on positive illusion and illusion of control which suggested that high perceived control can result in harmful effects in a situation where control is not objectively possible (Fenton-O'Creevy et al., 2003). In this regard, having superstitious beliefs alone was not sufficient for individuals to achieve better performance. Individuals also needed to have an adequate level of knowledge in stock investment in order to be successful in stock trading. In fact, these findings about the moderating effect of knowledge expertise make a lot of sense because stock investment is fundamentally different from gambling (Langer & Roth, 1975). The chances of being successful in stock trading require extensive market research, stock analysis, as well as sound judgments and right timing to make trade decisions that will maximize profit and minimize risks. Relying only on superstition to make money in stocks is no different from gambling in which the chances to win tend to be random (Langer, 1977; Langer & Roth, 1975). This rationale clearly explains why more superstitious beliefs lead to unsuccessful trade for those without sufficient knowledge in stock investment. It is also in line with the study of Joukhador et al. (2004), which found that superstitious beliefs tended to be more prominent in problem gamblers.

Despite the research contributions, there are some limitations that need to be considered. First, some other confounding factors that can affect stock trading performance were not controlled in the data analysis. Second, the sample was selected through a convenience sampling method. Thus, it

is possible that the sample may not be a good representative of the population. Third, the data were obtained through a self-reported measure which may be susceptible to some subjective bias. Given that research about the role of superstitious beliefs in stock trading is still scant, future research will need to investigate some factors that may explain why some people are more prone to be superstitious when trading stocks. Future research may provide other additional explanations why some superstitious traders were able to make profitable trade while others were not.

Conclusion

In summary, the overall results provided a critical implication regarding the influence of superstitious beliefs in the way of life of people in Thailand, where superstitions are unarguably an integral part of the culture. Even though the world has evolved into a digital age with a lot of high technological advancements, beliefs in superstitions that have been passed on from generation to generation for centuries are still ingrained in modern societies (George & Sreedhar, 2006). The question of whether superstition actually exerts a real power on outcomes that individuals achieve or are simply a pure “illusion of control” that individuals experience is still a scientifically unproven issue, and that is beyond the scope of this research. Although superstitious beliefs, in the eyes of many modern people, are considered preposterous, these beliefs can be meaningful for some groups of people, especially those who lack self-confidence and a sense of control. Engaging in superstitious rituals or adopting superstitious practices can help these individuals feel more confident that they can achieve what they expect, particularly because of the strong faith they place in the power of the “invisible means” in which they believe. However, while superstitious beliefs are regarded as an external source of efficacy that helps individuals raise their confidence in what might actually be their true competencies, these beliefs will become harmful if individuals regard them as a silver bullet that will magically help them achieve or solve everything in life. More importantly, when individuals develop a strong attachment to superstitious beliefs and decline to acquire or develop competencies and skills required to be successful in the task they perform, eventually they commit to what is called “blind faith,” and ultimately this can be detrimental to individuals.

Finally, the author concluded that embracing superstitious beliefs or engaging in superstitious beliefs or superstitious rituals is not wrong, as long as it makes individuals develop confidence and feel more secure in life. Nevertheless, the most important thing is that individuals have to embrace superstitious beliefs through insight. In this regard, individuals also need to take into consideration the crucial ingredient of success that lies internally within them. Accordingly, it is essential that individuals develop and acquire appropriate competencies and skills that will lead them to sustainable achievement in life, rather than just hinging their whole future upon a leap of faith in superstitions.

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