

How does the knowledge accumulation process affect Vietnamese entrepreneurs' success likelihood?

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Abstract

The nationwide economic reform in 1986 transformed Vietnam from a centrally planned economy to a socialist-oriented market economy. Entrepreneurs and entrepreneurial spirits within the populace are suggested to fuel the structural changes. Despite the importance of entrepreneurship in Vietnam's economy, studies in Vietnam mainly pay attention to the practical aspects of entrepreneurial activities and neglect the cognitive and theoretical aspects of entrepreneurship. Thus, the current study employs the information-processing perspective of the Mindsponge Theory to explore how entrepreneurs' knowledge accumulation can affect their perceived likelihood of business success. Bayesian analysis indicates that business-related experience positively affects entrepreneurs' business success likelihood. Greater willingness/readiness to transform thinking, acting, and beliefs can improve the business success of entrepreneurs who study others' failures carefully. However, for entrepreneurs who perceive learning from others' failures as unnecessary, higher willingness/readiness to transform diminishes their chance of success. Based on these findings, we recommend Vietnamese entrepreneurs accumulate knowledge through experience, learning, and an open mind for better decision-making and innovation creation capabilities. However, the learning process should be selective.

Keywords: BMF analytics, knowledge, openmindedness, success, information-processing

“Wherever there is food, there is freedom!”

In “Dream”; *The Kingfisher Story Collection* (2022)

1. Introduction

Entrepreneurship is widely acknowledged to be vital to economic progress. Due to its employment, innovation, and welfare benefits, entrepreneurship is a significant mechanism for fostering economic growth (Acs et al., 2008; Baumol, 2002; Schumpeter, 2017; Wennekers & Thurik, 1999). Going back to the 18th Century, theories of economic development have attempted to account for the significance and function of entrepreneurship and the people who drive it, entrepreneurs (Meyer et al., 2014; Parker, 2018). Throughout the 1990s, entrepreneurship research increased dramatically but was not recognized until the late 2000s. Anglo-Saxon researchers have dominated the field for the last two decades, with a notable representation from the United States, the United Kingdom, and Canada (Meyer et al., 2014). Thus, many scholars underline the need to better understand entrepreneurship's function in developing countries because entrepreneurial spirit may be culturally affected and, to some extent, institutionally supported (Acs et al., 2008; Audretsch & Thurik, 2001; Autio, 2008; Naudé, 2010).

Among developing countries, Vietnam is worth studying due to its cultural complexity (i.e., cultural additivity) (Vuong et al., 2018) and institutional distinction (i.e., Socialist-oriented market economy). *Đổi Mới* reform (renovation reform) was initiated in the 6th Congress of the Communist Party of Vietnam in December 1986, transitioning Vietnam from a centrally planned economy to a socialist-oriented market economy. According to Vu (1994), the reform had a different approach and determination compared to Gorbachev's *perestroika* (перестройка) and Deng Xiaoping's reform and opening (改革开放) — or formally, “Socialist market economy with Chinese characteristics,” and was driven by the economic and political isolation of Vietnam in the pre-Doi Moi period. However, this view was proved to be a *post hoc ergo propter hoc* fallacy. Instead, the existence of entrepreneurs and entrepreneurial spirits within the populace (even in the high years of centrally planned principles), combined with economic hardship, resulted in the process of looking for structural changes and emerging opportunities: economic reform (Vuong et al., 2011).

Đổi Mới reform has not only dramatically improved economic growth but also laid the ground for entrepreneurship development (Vuong, 2018a). Vietnam's *per capita* income doubled from \$202 to \$417 in 2001. According to World Bank's statistics, this number skyrocketed to more than \$3756, around 19 times higher than the *per capita* income in 1986. The rise of the first generation of Vietnamese entrepreneurs may be traced back to 1991 to 1999 when there were around 40,000 newly founded businesses (Vuong, 2018a). Considering the relatively modest size of its economy, Vietnam is dominated by small and medium companies (SMEs), whose expansion in number and capital over the last two decades has firmly established entrepreneurship as the economic backbone. While there were only around 37,700 SMEs in 2000, accounting for 96.47% of all firms, the number has risen to approximately 593,600 in 2018, accounting for 97.2% (about 610,600 firms) (Vietnam General Statistics Office, 2017). According to the Association (2018), Vietnam had the highest overall early-stage entrepreneurial activity (23.3%) and notable entrepreneurial spirit score (0.26) in 2018. Despite the substantial composition of SMEs in the economic structure and entrepreneurship potential, entrepreneurship research in Vietnam remains modest (Q. H. Vuong et al., 2020).

Most entrepreneurship studies in Vietnam concern the firms' capital and economic efficiency (Tran et al., 2017; Tran & Santarelli, 2014; Q. H. Vuong et al., 2020). Although financial capital is essential, other nonfinancial resources also have crucial impacts on the performance or success of entrepreneurial ventures, such as innovation capability. However, scholars have discovered that Vietnamese enterprises pay little attention to innovation because it is costly and requires massive investment in technological upgrades (Nguyen & Pham, 2017). Thus, the country's economic growth relies greatly on capital accumulation and cheap labor, which can lead to resource curse, and “resource poisoning” – adverse economic and social effects of excess investment poured into society without considering resource abundance (Nguyen,

2013; Vuong & Napier, 2014). Building a knowledge-based economy is a prominent way to avoid the adverse effects of the resource curse (Entele, 2021; Sepehrdoust & Shabkhaneh, 2018; Vuong & Napier, 2014). Moreover, a recent review suggests that entrepreneurship studies in Vietnam mainly pay attention to practical aspects of entrepreneurial activities (e.g., determinants of firm performance) and neglect the cognitive and theoretical aspects of entrepreneurship, which are pivotal topics of global entrepreneurship research.

For these reasons, the current study explores how entrepreneurs' knowledge accumulation can affect their perceived likelihood of business success through the information-processing perspective of the Mindsponge Theory. The information-processing perspective was employed because of several reasons. First, the information-processing perspective is founded on the metaphysical premise that everything inside and outside human brains may be analyzed through the lens of information (Adriaans, 2020; Davies & Gregersen, 2014; Graziano, 2022). Hence, the information-processing-based viewpoint affords us additional analytical and explanatory freedom with regard to the mental mechanism. It is even more effective when studying entrepreneurs whose performance is greatly influenced by bricolage, serendipity, and creativity (De Klerk, 2015; Dew, 2009; Fuglsang, 2010; Vuong, 2022). Last but not least, the Mindsponge Theory's information-processing approach has proven effective in explaining other psychological and behavioral issues (Nguyen & Jones, 2022a, 2022b; Nguyen, Khuc, et al., 2022; Vuong et al., 2023; Vuong, Le, et al., 2022; Vuong et al., 2021).

Using the Bayesian Mindsponge Framework (BMF) analytics on the most comprehensive dataset of Vietnamese 3071 entrepreneurs, the present study investigates how entrepreneurs' business-related knowledge and learning from other failures affect their success likelihood in condition to their willingness to transform ways of thinking, acting, or beliefs. BMF is an analytical framework employing the strengths of Mindsponge Theory's theoretical reasoning and the inference advantages of Bayesian analysis. Detailed reasoning and model formulation based on Mindsponge Theory are presented in the next section.

2. Methodology

2.1. Theoretical foundation

2.1.1. Overview of the Mindsponge Theory

In their early research on acculturation and globalization, Quan-Hoang Vuong and Nancy K. Napier coined the term mindsponge (Vuong & Napier, 2015). The notion was characterized as a dynamic process or mechanism that explains how a mind absorbs new cultural values and discards fading ones dependent on context, using the metaphor "the mind as a sponge that squeezes out inappropriate values and absorbs new ones that fit or complement the context" (Vuong & Napier, 2015). The original mindsponge mechanism is constructed by studying psychological and social phenomena, which is consistent with and complements a

large number of other theories and frameworks (Ajzen, 1991; Hofstede et al., 2005; Maslow, 1981; Mintzberg, 1973; Nonaka & Konno, 1998; Porter, 2011). Later, it evolved into a theory of mental information processing integrating the most recent findings from brain and life sciences (Vuong, 2023). In the theory, the mind is described as a collection-cum-processor of information, including biological and social systems of varying degrees of complexity.

The following are the characteristics of a mindsponge information-processing system: 1) It reflects underlying biosphere system patterns; 2) It is a dynamic, dynamically balanced process. 3) It involves cost-benefit analysis, which seeks to maximize the perceived benefits of the system while minimizing its perceived costs; 4) It consumes energy and thus adheres to the concept of energy saving; 5) It includes objectives and priorities based on system requirements; 6) Its primary purpose is to ensure the continued life of the system, which includes survival, growth, and reproduction.

The mindset is the system's memory-resident collection of all accepted information. Based on the content of the existing mindset, the filtering mechanism governs what information enters and leaves the mindset. Filtering information changes both the thinking and the filtering mechanism. The trust mechanism (selective prioritization) can be utilized to speed up the filtering process to save energy (Vuong, 2023).

2.1.2. Proposed hypotheses

Through biochemical changes in neurons, information acquired from the external world or created internally is retained as engrams – cognitive information imprinted in a physical substance. In engram neurons, memory consolidation occurs as a result of DNA (deoxyribonucleic acid) methylation activated by signals that result in stable structural changes (Alberini & Kandel, 2015; Bernstein, 2022). The hippocampus and amygdala are thought to be in charge of constructing cognitive maps of stored information (Behrens et al., 2018; Solomon et al., 2019). Before being consolidated in the neocortex for long-term storage, information entering the brain is suggested to be stored temporarily in the hippocampus (Kitamura et al., 2017; Tonegawa et al., 2018). In the process of long-term potentiation, the strength of synaptic connections grows as signals are transferred via synapses (Bliss & Collingridge, 1993). These dynamic information storage mechanisms serve as the foundation for neuroplasticity, enabling flexible adaptations for the processing system (or the mind).

Based on knowledge of neuroscience, Mindsponge Theory defines a mindset as a set of stored information in the central nervous system that can be aware of in the form of trusted (accepted) values – subjective meanings attached to the information. From this set of trusted values, the processing system develops responses (i.e., behaviors) deemed appropriate for the current situation. The outputs of conscious and non-conscious mental processes (e.g., beliefs, thoughts, attitudes, feelings, behaviors, etc.) are also influenced by the existing

trusted values within the mindset. It is worth emphasizing that interpretations of things are influenced by the information in mind rather than the objects themselves (83). Thus, a person's response to the surrounding environment is constrained by the amount and types of information available in their mindset.

The evolution of minds tends to progress toward greater information storage and processing capability for more flexible and efficient utilization of such information. The evolutionary tendency is founded on the most basic premise of all living things: survival. As social species, humans also have a sense of social survival besides natural survival (Le, 2022). In this respect, a human's thinking may be thought of as a well-optimized adaptive memory system.

Entrepreneurs are characterized as “a decision maker whose entire role arises out of his alertness to hitherto unnoticed opportunities” (Kirzner, 2015). After noticing the opportunities, the entrepreneurs have to monitor different sources of innovation, solve various issues regarding the implementation process *ex ante*, pool and utilize resources, and translate the implementation into realities (Vuong et al., 2011). From the Mindsponge Theory's perspective, entrepreneurs' decisions are products of information processes. Such decisions will lead to subsequent functions of entrepreneurial businesses. Whether such businesses are successful or not is tested by the market or the external environment. If entrepreneurs' thinking (or information in their minds) fits with reality, their decisions will likely generate revenue and make the businesses successful (Nguyen et al., 2023). Otherwise, the decisions will likely result in businesses' poor performance, leading to failure. Given that the mindset greatly influences the information processes, entrepreneurs having experience (memories) with business-related work are more likely to respond to the surrounding environment better and generate better decisions which might increase the success likelihood of the businesses. Thus, our first Hypothesis (H) is as follows:

H1: Entrepreneurs acquiring business-related experience are more likely to have a higher chance of business success.

The information absorption process is required for information to appear in mind. An organism cannot comprehend the world around it, navigate within it, or make decisions to adapt to a changing external environment without the absorption process. Absorbing the information of other entrepreneurs' failures is one effective way to make the information within the mind fit with reality, as failures are tested attempts. When the information is integrated into the mindset, it will be used to generate subsequent decisions that are likely to help entrepreneurs avoid risks inducing previous failures. Learning other failures is vital for success considering the complex and unpredictable legal practices in Vietnam's transitional context. For example, due to a set of unwritten rules, businesses have to pay out of their own pockets to smoothen operations, thereby increasing entrepreneurial transaction costs (Q.-H. Vuong et al., 2020). In Vietnam, however, “giving an envelope” has a deeper meaning: it is about building a mutually beneficial relationship between the

businesses and the authorities involved. In this sense, institutional boundaries are momentarily breached, allowing for personal maneuvering. Some research has shown that bribery or “speed money” assists businesses in reducing expenses associated with a lack of security and transparency (Tran et al., 2016; Van Vu et al., 2018). As a result, we hypothesized that:

H2: Entrepreneurs learning from others’ failures are more likely to have a higher chance of business success.

The absorption process in humans is influenced by sensory systems, information stored in the internal mind, and information accessible in the external world. When the four following conditions are met, information is absorbed into the mindset and turns into a highly trusted value (Vuong, 2023).

- 1) First, the information must be present in the environment to be absorbed.
- 2) Second, to absorb information, the mind must have a receptor compatible with the information (i.e., the visual system for seeing and the auditory system for hearing).
- 3) Even if the first and second conditions are met, the quantity of information that may be absorbed is subject to the reception efficiency of the receptors.
- 4) The fourth condition is whether the mind trust or perceives the benefits of the information

Even after the information is absorbed into the mind, it can still be discharged if perceived as waning values during the multi-filtering process. The filtering system uses stored information in the mindset to assess the compatibility of newly received information, so its evaluation is heavily subjective. Due to this mechanism, information with similar characteristics to trusted values will be accepted more easily, and vice versa. Suppose there are no relevant information existing in the mindset. In that case, information will be thoroughly evaluated using the information within the mind and that absorbed from the environment, which is a timely process. When new information is incorporated, the mindset is updated. The mindset can still be updated due to values contrasting with the mind if they result in positive feedback from the environment and the person is willing to change (Vuong, Nguyen, et al., 2022a). If an entrepreneur’s willingness/readiness to change their minds is high, it will affect the filtering process and the updated mindset, subsequently influencing the decision-making processes and success likelihood. For example, people with a high willingness/readiness to change will have a more effective absorption process of others’ failures. Then, they will have a higher success likelihood. Given this characteristic of the filtering system, we hypothesized that:

H3: The effect of business-related experience on a business’s chance of success is conditional on the entrepreneurs’ willingness to transform their ways of thinking, acting, and beliefs.

H4: The effect of learning from others' failures on a business's chance of success is conditional on the entrepreneurs' willingness to transform their ways of thinking, acting, and beliefs.

2.2. Model construction

2.2.1. *Variable selection and rationale*

In this study, we use the secondary data obtained from the dataset of Vuong (2016) to examine how the interplay between entrepreneurs' business-related knowledge, learning from other failures, and willingness to transform ways of thinking, acting, or beliefs link to their success likelihood. The dataset was collected from a nationwide field survey on entrepreneurs' perceptions and decisions of businesses' likelihood of success and continuity. The survey was conducted from March to May 2015 in Vietnam directly from participants of entrepreneurs' seminars, conferences, and meetings in five regional economic centers (Hanoi, Ho Chi Minh City, Da Nang, Buon Ma Thuot, Can Tho). Authorized personnel informed entrepreneurs who would like to participate in the survey about the aim of the questionnaire and how to complete it. At the end of each event, answers were compiled. The survey team randomly approached around 10,000 of the estimated 50,000 entrepreneurs attending these events over the survey period and gathered a random data sample of 3071 observations afterward. Incomplete questionnaire sheets were eliminated before being entered into the dataset. The dataset is available at: <https://data.mendeley.com/datasets/kbrtrf6hh4/2>.

In the survey, they asked four questions related to the entrepreneurs' knowledge and knowledge seeking-behaviors: the previous job of participants, the pattern of learning from others' failures, and entrepreneurial efforts to transform ways of thinking, acting, and beliefs, and the evaluated chance of success. The relationships among the results from these questions will clear our way to the answer to our investigation. In his work, the author has summarized all the data in three fields: coded name, explanation, and values. However, to serve our work, the variables need to be transformed in a readable way to our methodology (i.e., converted to numbers for the estimations of models). Hence, in Table 1, the variables and how they were coded are described in five criteria: coded name, explanation, values, converted variable, and converted value.

Table 1. Data descriptions

Coded name	Explanation	Values	Converted variable	Converted value
<i>X1.job</i>	Previous job	Human resources (hmr);	<i>InternalInfor</i>	None=0

		sales/marketing (salesm), production/operations (pom); finance/accounting (finance); administrative or other departments (admin); no significant job experience (none)		Others=1
<i>X10.failurel</i>	Learning from others' failures	Careful study (a); exploring few noteworthy cases (b); and, no need (c).	<i>ExternalInfor</i>	a = 3 b = 2 c = 1
<i>X19.msponge</i>	Entrepreneurial efforts to transform ways of thinking, acting and beliefs?	Strong; some aspects; negligible; none	<i>TransMind</i>	Strong = 4 Some aspects = 3 Negligible = 2 Non = 1
<i>X23.chance</i>	Evaluated chance of success?	Certain; high (>80%); med (50-80%); low (<50%).	<i>EvaluatedSuccesses</i>	Certain = 4 High = 3 Med = 2 Low = 1

The variable *InternalInfor* was converted from variable *X1.job* in the original dataset to measure the business-related experience of the entrepreneur. This variable reflects the familiarity of entrepreneurs with the business environment they are operating: the more familiarity, the better fit between their mental expectations and the realities. If the

entrepreneur possessed any business-related job before starting the entrepreneurial businesses, they would be coded as 1; otherwise, they would be coded as 0.

The variable *ExternalInfor* was converted from variable *X10.failure1* in the original dataset to measure the entrepreneurs' patterns of learning from others' failures. This variable reflects how an entrepreneur can access more information about tested attempts which can aid them in fitting their mental expectation with the realities. Entrepreneurs with a more thorough examination of the failure cases were coded as a higher number; specifically, the careful study was coded as 3, exploring few noteworthy cases was coded as 2, and no need was coded as 1.

The variable *TransMind* was converted from *X19.msponge* in the original dataset to measure entrepreneurs' willingness/readiness to transform their thinking, acting, and beliefs (or set of trusted values in their minds). When the willingness/readiness is high, new and strange information will be evaluated less rigorously and more likely to be accepted into the mindset. As this willingness/readiness is hardly measured objectively, we employed the self-evaluation method. The higher the willingness/readiness of the entrepreneur was, the higher value it was coded, ranging from 1 to 4.

The success likelihood of entrepreneurs' businesses could hardly be measured objectively due to the huge variance among their businesses and contexts. Thus, self-evaluation of the success was employed to measure the success likelihood. Each entrepreneur has their own expectations of success (e.g., revenue, reputation, social improvement, etc.), so the more perceived realities fit with their expectations, the more likely they will think the business to be successful. The variable *EvaluatedSuccess* was measured with four levels: certain, high (>80%), medium (50-80%), and low (<50%). These levels correspond to 4, 3, 2, and 1, respectively.

2.2.2. Statistical models

In this study, we assumed that working experience and pattern of learning from others' failures might have positive impacts on a business's success chance (see Hypotheses 1 and 2), and these effects are conditional on the entrepreneurs' willingness/readiness to change (see Hypotheses 3 and 4). We constructed four multiple linear regression models to check our assumptions, starting with the simplest. Specifically, Model 1 was constructed to examine Hypotheses 1 and 3:

$$EvaluatedSuccess \sim normal(\mu, \sigma) \quad (1.1)$$

$$\mu_i = \beta_0 + \beta_{InternalInfor} * InternalInfor_i + \beta_{InternalInfor*TransMind} * InternalInfor_i * TransMind_i \quad (1.2)$$

$$\beta \sim normal(M, S) \quad (1.3)$$

The probability around μ is determined by the form of the normal distribution, whose width is specified by the standard deviation σ . μ_i indicates the evaluated success of entrepreneur i 's business; $InternalInfor_i$ indicates whether entrepreneur i had any business-related experience; $\beta_{InternalInfor*TransMind}$ indicates the coefficient of the non-additive effect of $InternalInfor_i$ and $TransMind_i$ on $EvaluatedSuccess$. If the coefficient $\beta_{InternalInfor*TransMind}$'s distribution is significant, and the association between business-related experience and success likelihood is considered conditional on the willingness/readiness to transform. Model 1 has four parameters: the coefficients, $\beta_{InternalInfor}$ and $\beta_{InternalInfor*TransMind}$, the intercept, β_0 , and the standard deviation of the "noise", σ . The coefficients of the variable $InternalInfor_i$ and interaction variable between $InternalInfor_i$ and $TransMind_i$ are distributed as a normal distribution around the mean denoted M and with the standard deviation denoted S .

Similarly, to test Hypotheses 2 and 4, we constructed Model 2:

$$EvaluatedSuccess \sim normal(\mu, \sigma) \quad (2.1)$$

$$\mu_i = \beta_0 + \beta_{ExternalInfor} * ExternalInfor_i + \beta_{ExternalInfor*TransMind} * ExternalInfor_i * TransMind_i \quad (2.2)$$

$$\beta \sim normal(M, S) \quad (2.3)$$

$ExternalInfor_i$ indicates entrepreneur i 's pattern of learning from others' failure; $\beta_{ExternalInfor*TransMind}$ indicates the coefficient of the non-additive effect of $ExternalInfor_i$ and $TransMind_i$ on $EvaluatedSuccess$. If the coefficient $\beta_{ExternalInfor*TransMind}$'s distribution is significant, and the association between the learning pattern and success likelihood is considered conditional on the willingness/readiness to transform.

To test whether Hypotheses 1-4 are robust when other factors appear in the model, we combined Models 1 and 2 and added variable $\beta_{TransMind}$ into the model. As a result, Model 3 is as follows:

$$EvaluatedSuccess \sim normal(\mu, \sigma) \quad (3.1)$$

$$\mu_i = \beta_0 + \beta_{InternalInfor} * InternalInfor_i + \beta_{InternalInfor*TransMind} * InternalInfor_i * TransMind_i + \beta_{ExternalInfor} * ExternalInfor_i + \beta_{ExternalInfor*TransMind} * ExternalInfor_i * TransMind_i + \beta_{TransMind} * TransMind_i \quad (3.2)$$

$$\beta \sim normal(M, S) \quad (3.3)$$

The logical model of Model 3 can be plotted in Figure 1.

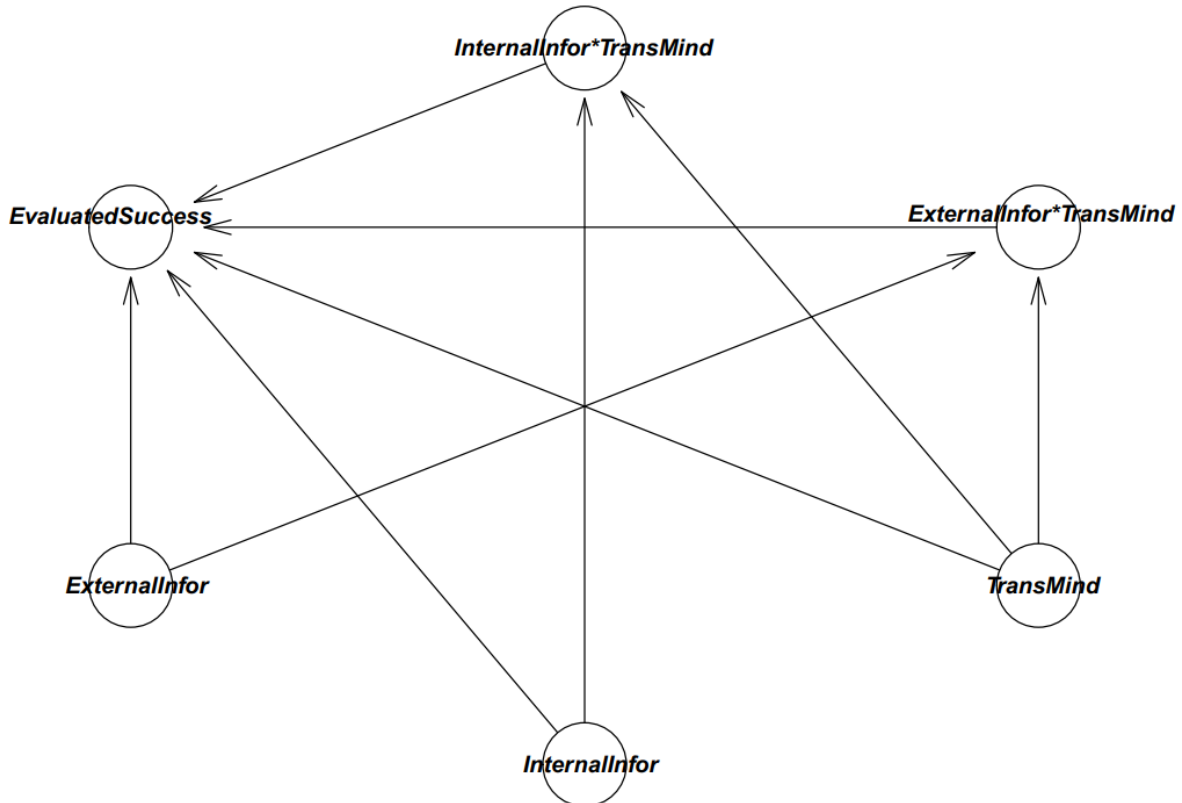


Figure 1: Logical network of Model 1

2.3. Analysis and validation

This study employed BMF analytics, an analytical approach that combines the Mindsponge Theory’s ability to explain psychological complexity in the human mind and the statistical advantages of Bayesian as an analytical framework (Nguyen, La, et al., 2022a, 2022b). There are several advantages to employing BMF analytics. First, the Mindsponge Theory and Bayesian inference have many compatible properties with each other, of which some can be utilized in the current study: 1) they are built on subjectivity; 2) they offer great flexibility in model construction and fitting; and 3) they obtain the updating features. Second, Bayesian analysis probabilistically examine all attributes (including unknown parameters and

uncertainties) (Csilléry et al., 2010; Gill, 2014), so it helps researchers avoid concerning control factors and focus solely on the theoretically chosen variables, ensuring the parsimony principle (also known as Occam's razor). Moreover, the Hamiltonian Monte Carlo algorithm-supported Bayesian inference does not rely on the asymptotic assumption [62,63], providing a more accurate estimation using the data at hand.

All Bayesian linear regression problems were evaluated using the `bayesvl` R package (La & Vuong, 2019), chosen for its user-friendly and intuitive procedure, capacity to display stunning graphics, and affordability (Vuong, Nguyen, et al., 2022b). Four Markov chains, each having 5000 iterations, were used to fit the model. As a warm-up phase, the first 2000 iterations were installed. Since this is an exploratory study, the models were built using uninformative priors defining a flat prior distribution to offer as little prior information as possible to the model estimate. While the prior information is still there, it is so little as to be insignificant (Diaconis & Ylvisaker, 1985).

Following the simulation, the Pareto smoothed importance-sampling leave-one-out cross-validation (PSIS-LOO) method was used to verify the models' goodness of fit with the available data (Vehtari & Gabry, 2019; Vehtari et al., 2017). LOO is computed using the following formula.

$$LOO = -2LPPD_{loo} = -2 \sum_{i=1}^n \log \int p(y_i | \theta) p_{post(-i)}(\theta) d\theta$$

$p_{post(-i)}(\theta)$ is the posterior distribution based on the data minus data point i . When employing the PSIS method in R, k -Pareto values are used to compute leave-one-out cross-validation, which helps identify observations with a problematic influence on the PSIS estimate. If the k values are less than 0.5, the model has a sufficient degree of goodness-of-fit.

By analyzing the effective sample size (n_{eff}) and Gelman-Rubin shrink factor ($Rhat$), the Markov property or the convergence of the Markov chains was evaluated to determine whether the estimated results are qualified for interpretation. After the stochastic simulation, the n_{eff} value reflects the number of non-autocorrelated iterative samples. The effective samples are deemed adequate for credible inference if the n_{eff} values are more than 1000. Another measure of convergence is the $Rhat$ value (Gelman-Rubin shrink factor). If the $Rhat$ values are more than 1.1, the chains may fail to converge. $Rhat$ values equaling one indicate convergence. The convergence may additionally be diagnosed visually using the trace, Gelman-Rubin-Brooks, and autocorrelation plots. All the code and data employed for the current study were deposited in the following link to reduce the cost of reproduction (Vuong, 2018b):

3. Results

3.1. Model comparison

We measure the weight of model predictions using Pseudo-BMA without Bayesian bootstrap, Pseudo-BMA with Bayesian bootstrap, and Bayesian stacking. Model 3 appears to be the most predictive model as it outweighs other models in most categories (i.e., Pseudo-BMA with Bayesian bootstrap, Bayesian stacking). Thus, Model 3 is chosen for the result presentation and interpretation.

Table 1: Model weights comparison and model ranking

Model	Pseudo-BMA without Bayesian bootstrap	Pseudo-BMA with Bayesian bootstrap	Bayesian stacking
Model 1	0.0000	0.3760	0.0532
Model 2	0.5021	0.4948	0.4642
Model 3	0.4979	0.5032	0.4826
Most predictive model	Model 2	Model 3	Model 3

The PSIS-LOO approach was then employed to check the model's goodness of fit with the data. Figure 2 illustrates that all Model 3's Pareto k indicators are below the threshold of 0.5, suggesting a good fit with the data.

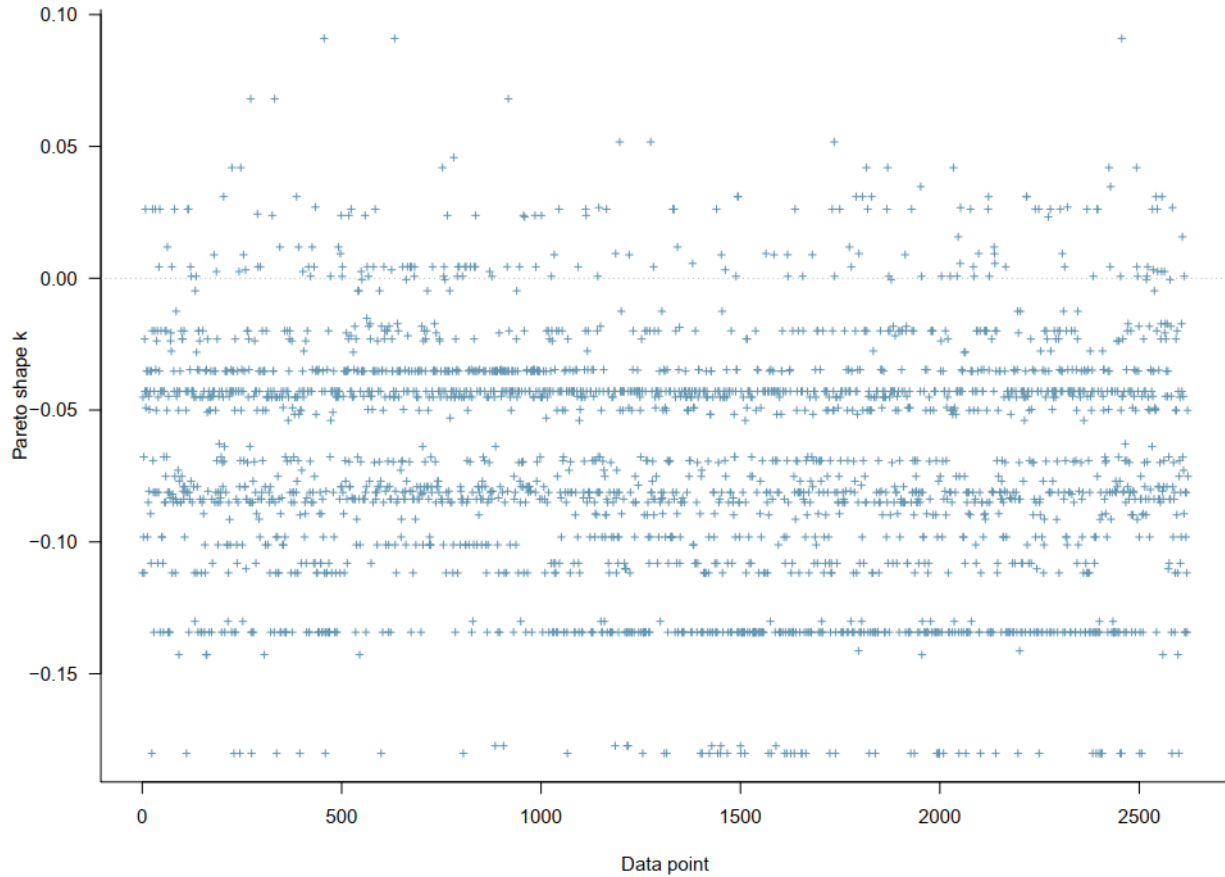


Figure 2: Model 3's PSIS-LOO diagnosis plots

3.2. Convergence diagnostics

Based on convergent indicators, all models' posteriors are deemed well-convergent. Specifically, all *Rhat* values equal 1, and the effective sample size (n_{eff}) passes the standard threshold of 1000 (see Table 3).

Table 3: Results of Model 3

Parameters	Mean	SD	n_{eff}	Rhat
Constant	2.39	0.28	3521	1
<i>TransMind</i>	-0.16	0.08	3527	1
<i>ExternalInfor</i>	-0.14	0.13	3406	1

<i>ExternalInfor*TransMind</i>	0.10	0.04	3382	1
<i>InternalInfor</i>	0.14	0.16	4869	1
<i>InternalInfor*TransMind</i>	-0.03	0.05	4847	1

The convergence diagnosis plots also validate Model 3's Markov chains convergence. Figure 3 shows a stable variation of the Markov chains of Model 4 around a center equilibrium, which is a sign of convergence. The Gelman-Rubin-Brooks plots also validate the convergence as shrink factors decrease to one before the warm-up periods end (see Figure 4).

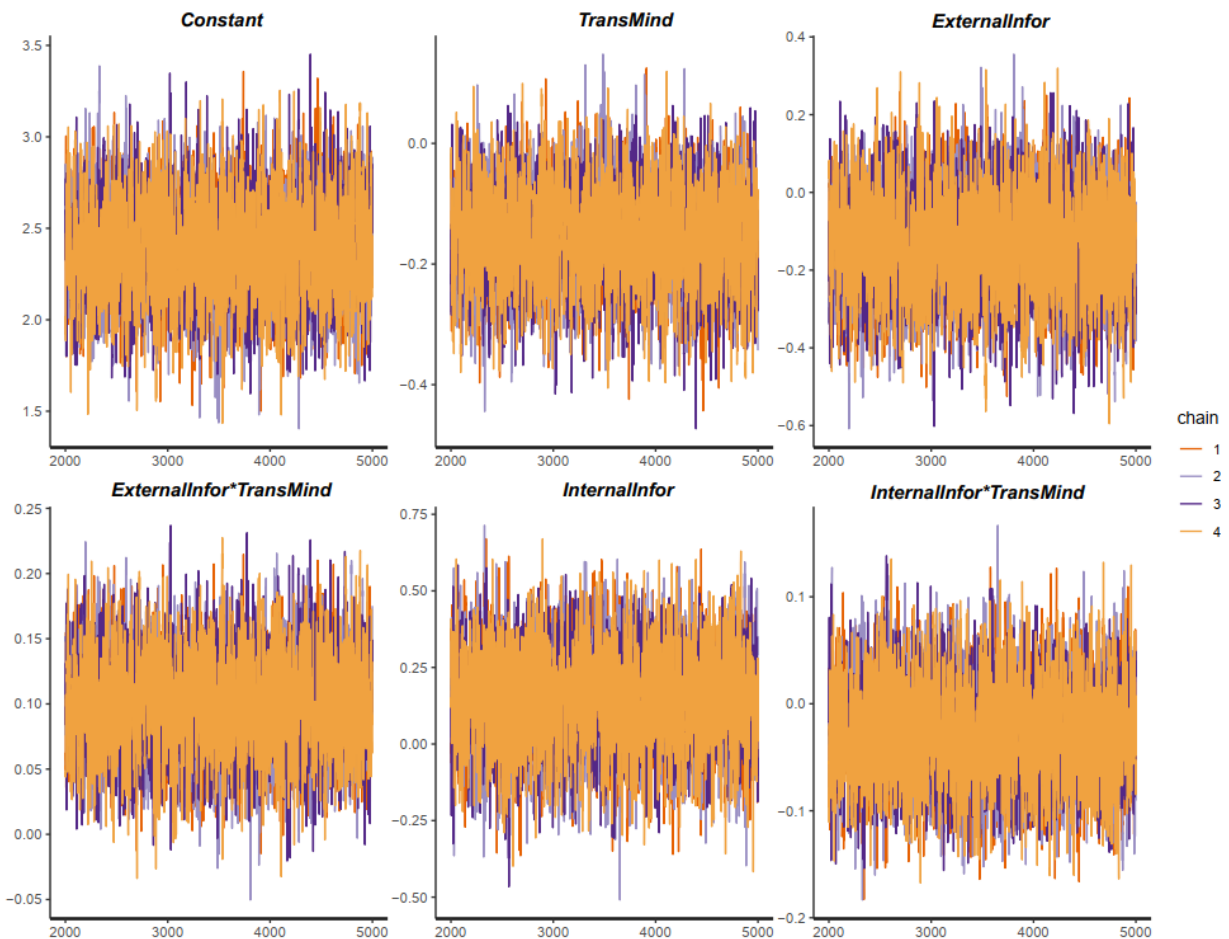


Figure 3: Model 4's trace plots

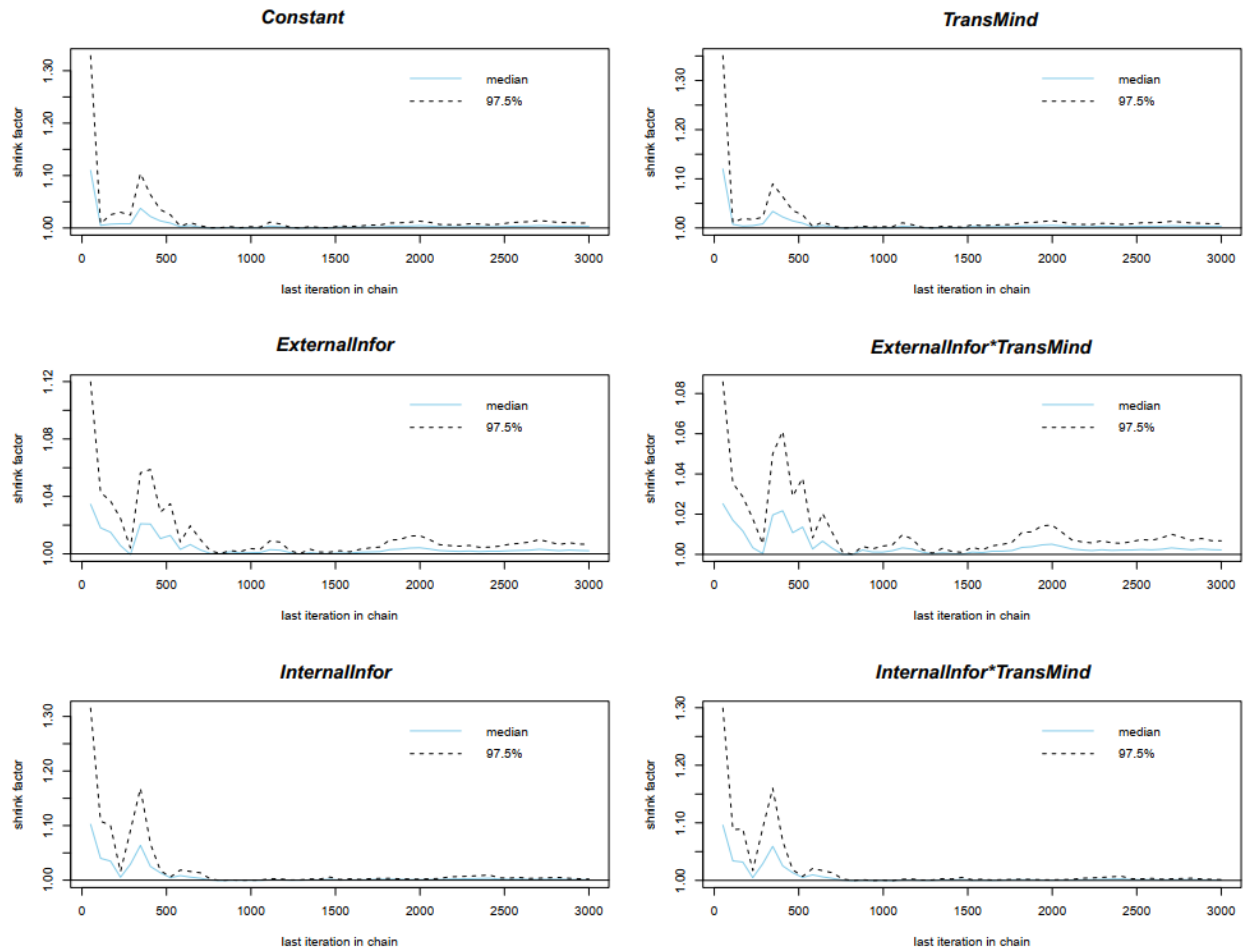


Figure 4: Model 4's Gelman–Rubin–Brooks plots

Figure 5 presents the autocorrelation plots, further validating the Markov chain convergence. The autocorrelation levels drop to zero after several lags, implying that iterative samples in the stochastic simulation process are memoryless.

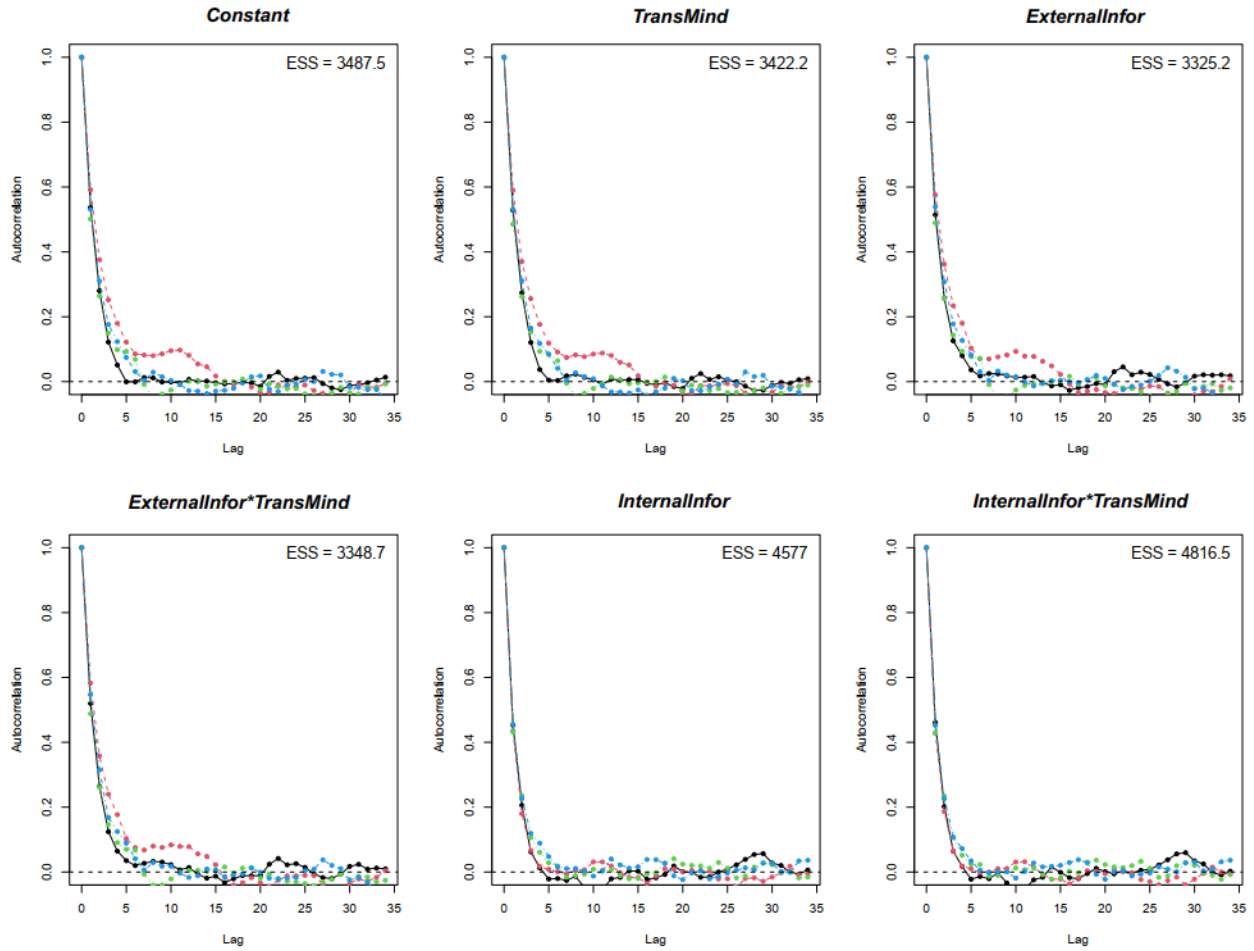


Figure 5: Model 4's autocorrelation plots

3.3. Result interpretation

The posterior distributions of Model 3's coefficients are presented in Table 3 and visualized in Figure 6 accordingly.

Figure 6 presents the simulated posteriors of Model 3 on an interval plot. The thick blue lines display the probability density within the 89% Highest Posterior Density Intervals, while the thin blue lines represent the probability distributed outside of the highest credible zone (HPDI), and the dot presents the mean value, which is considered the highest probability parameter. It is noticed from Figure 6 that *TransMind* and *ExternalInfor* have negative effects on the success of entrepreneurship ($M_{TransMind} = -0.16$ and $S_{TransMind} = 0.08$; $M_{ExternalInfor} = -0.14$ and $S_{ExternalInfor} = 0.13$). However, the interaction between *TransMind* and *ExternalInfor* has a positive influence on *EvaluatedSuccess* ($M_{ExternalInfor*TransMind} = 0.10$ and $S_{ExternalInfor*TransMind} = 0.04$). The effects of *TransMind* and *ExternalInfor*TransMind* are highly reliable because their HPDIs are located entirely on the side of the x -axis, while the effect of *ExternalInfor* is moderately reliable as a

portion of its HPDI is still located on the positive side of the x -axis. The *InternalInfor* also has a positive impact on the success ($M_{InternalInfor} = 0.14$ and $S_{InternalInfor} = 0.16$), but the effect is moderately reliable as there is still a portion of the distribution lying on the negative side of the x -axis. Meanwhile, the effect of *InternalInfor*TransMind* is negligible ($M_{InternalInfor*TransMind} = -0.03$ and $S_{InternalInfor*TransMind} = 0.05$).

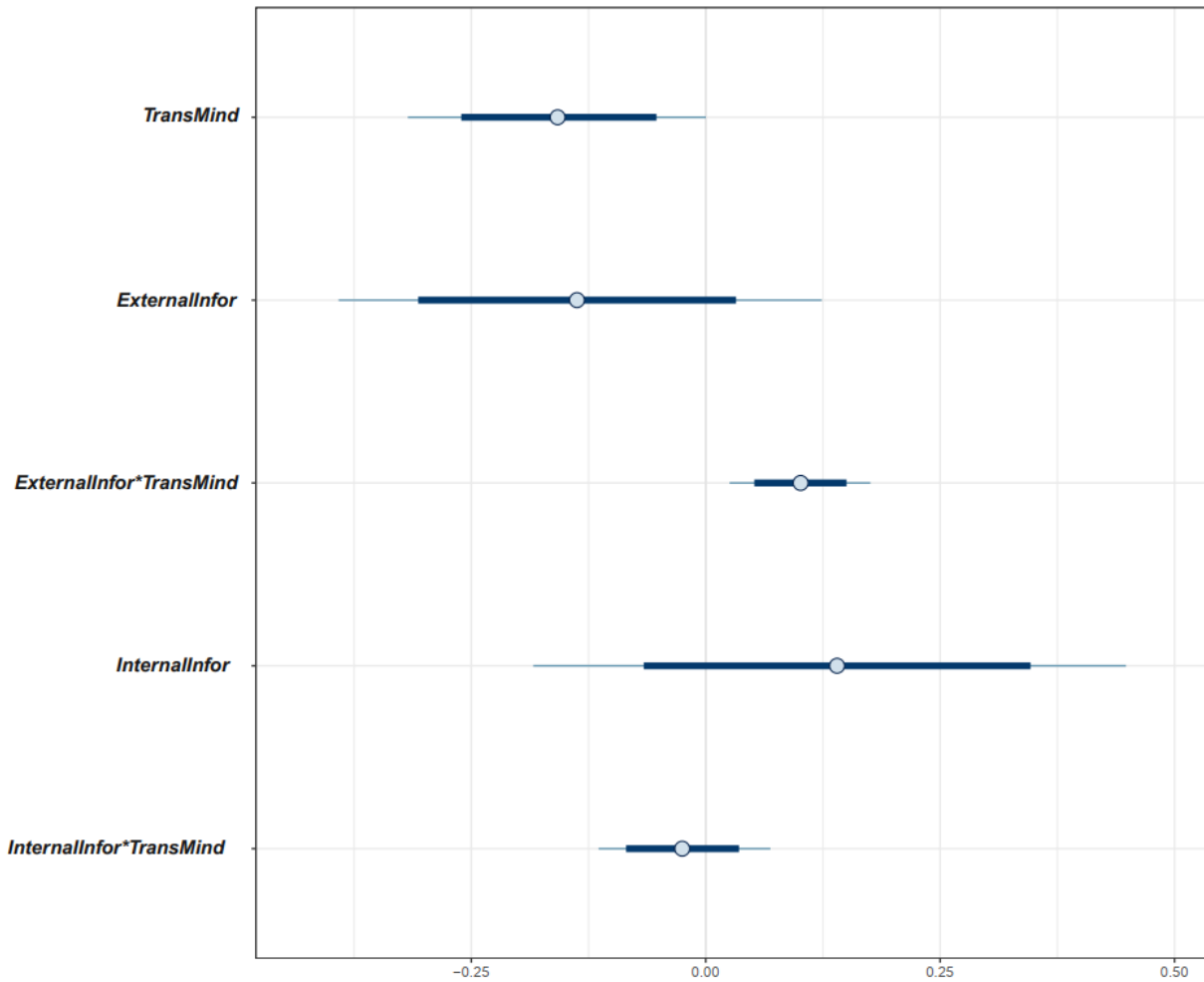


Figure 6: Model 3's posterior distributions

To elaborate on the results, we employed Equation 3.2 and the estimated mean values of parameters in Table 3 to calculate entrepreneurs' likelihood of success. Figure 7 shows the business-experienced entrepreneurs' likelihood of success corresponding to their willingness/readiness to transform and the learning pattern from others' failures. It can be seen that the entrepreneur's willingness/readiness to transform only helps increase the likelihood of success when they study others' failures carefully. If they think studying others' failures is unnecessary, their likelihood of success declines when their willingness/readiness to transform increases.

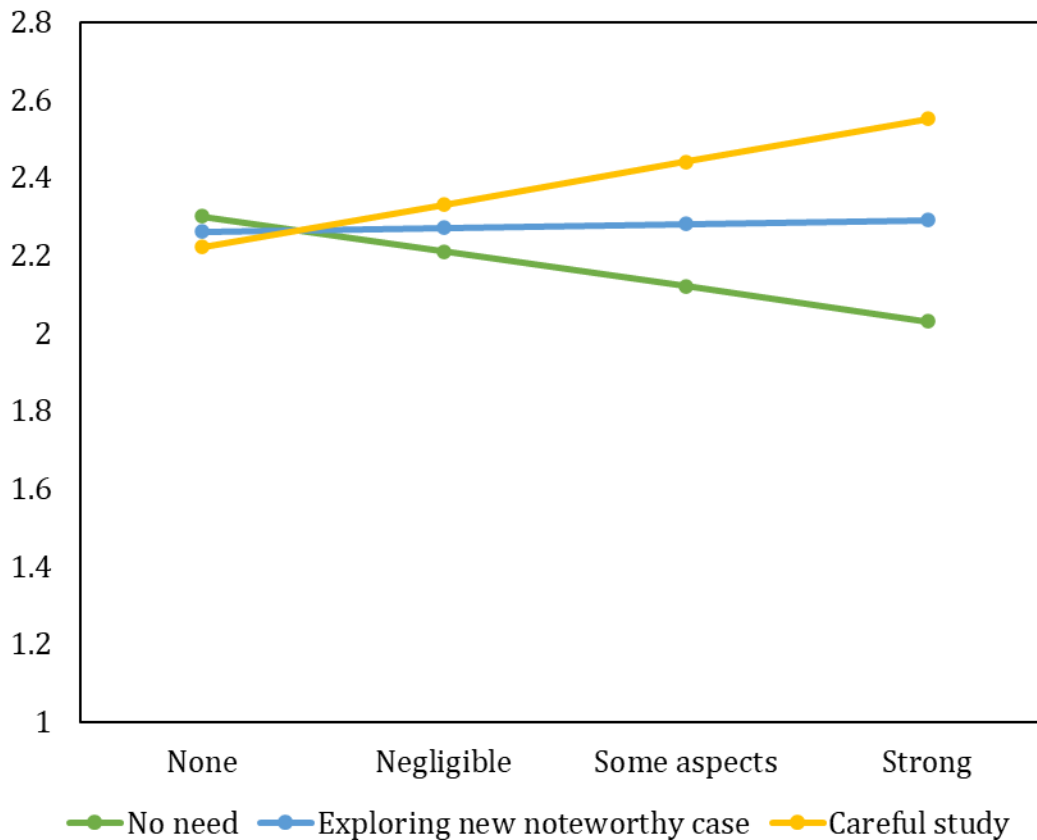


Figure 7: Business-experienced entrepreneurs' likelihood of success according to their willingness/readiness to transform and patterns of learning from others' failures

4. Discussion

The current study employed BMF analytics on a dataset of 3071 Vietnamese entrepreneurs' perceptions to investigate how entrepreneurs' business-related experience and learning from others' failures affect the likelihood of business success and whether their willingness/readiness to adapt novel ways of thinking, acting, or beliefs moderate these effects.

We found that entrepreneurs with business-related experience are likelier to have higher success than those without experience. There are several explanations for this finding from the mindsponge perspective. Business-related entrepreneurs tend to have a larger set of information (or knowledge) associated with doing business, making their expectations fitter with the market and increasing the probability of success. Such knowledge is acquired through learning-by-doing, direct observation, and/or training and guidance (Petkova, 2009). Based on the acquired pool of knowledge, entrepreneurs make decisions that seem

to have the best chance of success and discard the actions that appear to be failures (Funken et al., 2020).

As a result, some information becomes trusted values that are crucial components of the information-processing system and influence the subsequent thinking process. This explanation is consistent with the dynamic model of entrepreneurial learning proposed by Minniti and Bygrave (Minniti & Bygrave, 2001). Trusted values will later affect information absorption by expediting the filtering process (or giving a “priority pass” to information analogous to the trusted values in the mindset), whereas distrusted information is discarded quickly without thorough examination. This mechanism is analogous to the term *heuristics* (or cognitive shortcuts) in entrepreneurial decisions (Cristofaro & Giannetti, 2021). Although the trust mechanism (or heuristics) will lead to both positive and negative outcomes (Artinger et al., 2015), decisions induced by the trust mechanism (or heuristics) of experienced entrepreneurs are reasonably more effective than those of non-experienced ones. Besides better decisions, a larger pool of knowledge also lay a better foundation for serendipity strikes, leading to innovation (Vuong, 2022).

Our finding also suggests that the willingness/readiness to transform thinking, acting, and beliefs is beneficial for business success only for entrepreneurs carefully studying others’ failures. For entrepreneurs who perceive learning from others’ failures as unnecessary, the willingness/readiness to transform even reduces their likelihood of success. Through the lens of Mindsponge Theory, the willingness/readiness to transform helps reduce the perceived cost of absorbing and filtering new information, making the mindset more likely to be updated. However, not all information is beneficial or accurate. Absorbing accurate information can even create cognitive traps which deviate the mind from realities and influences it to adopt poor adaptive decisions to the changing environment, leading to a higher probability of failures (Drucker, 2013; Hammond et al., 1998; Nguyen et al., 2023). Therefore, entrepreneurs should adopt willingness/readiness to transform together with in-depth learning from a good source of information (e.g., failure lessons) to update their minds better fit with the realities.

Based on these findings, we suggest entrepreneurs build up their knowledge pool through experience, learning, and being open-minded. A sufficient pool of knowledge will support entrepreneurs to make better decisions and create mental conditions for them to innovate. Our recommendations are even more crucial in Vietnam, where entrepreneurs prefer imitation to innovation and are usually based on personal intuition and pure luck, with no logical planning, for initial settings (Thai & Anh, 2016). However, knowledge learning should also be selective (i.e., learning from others’ failures). Knowledge is power, but inaccurate knowledge is poison.

The current study is not without limitations (Vuong, 2020). Thus, we present them here for transparency. First, the study employs self-reported likelihood of success to proxy their

success, so the evaluation might be influenced by some other mental characteristics of entrepreneurs, leading to cognitive biases. Future studies should validate the results using objective measurements of success. Each sector (e.g., technology, food and beverage, etc.) and business structure (e.g., family business, etc.) will have different characteristics, so entrepreneurs also need to possess a suitable mindset to operate successfully. However, the current study did not focus on these points, so they can be potential topics for further studies.

References

- Acs, Z. J., Desai, S., & Hessels, J. (2008). Entrepreneurship, economic development and institutions. *Small Business Economics*, *31*, 219-234.
- Adriaans, P. (2020). Information. In *Stanford Encyclopedia of Philosophy*. Stanford: Stanford University.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179-211.
- Alberini, C. M., & Kandel, E. R. (2015). The regulation of transcription in memory consolidation. *Cold Spring Harbor Perspectives in Biology*, *7*(1), a021741.
- Artinger, F., Petersen, M., Gigerenzer, G., & Weibler, J. (2015). Heuristics as adaptive decision strategies in management. *Journal of Organizational Behavior*, *36*(S1), S33-S52.
- Association, G. E. R. (2018). *Global Entrepreneurship Monitor 2017/2018 Global Report*. <https://www.gemconsortium.org/report/gem-2017-2018-global-report>
- Audretsch, D. B., & Thurik, A. R. (2001). What's new about the new economy? Sources of growth in the managed and entrepreneurial economies. *Industrial and Corporate Change*, *10*(1), 267-315.
- Autio, E. (2008). High-and low-aspiration entrepreneurship and economic growth in low-income economies. UNU-WIDER Workshop on Entrepreneurship in Economic Development, Helsinki.
- Baumol, W. J. (2002). *The free-market innovation machine: Analyzing the growth miracle of capitalism*. Princeton University Press.
- Behrens, T. E., Muller, T. H., Whittington, J. C., Mark, S., Baram, A. B., Stachenfeld, K. L., & Kurth-Nelson, Z. (2018). What is a cognitive map? Organizing knowledge for flexible behavior. *Neuron*, *100*(2), 490-509.
- Bernstein, C. (2022). DNA methylation and establishing memory. *Epigenetics Insights*, *15*, 25168657211072499.
- Bliss, T. V., & Collingridge, G. L. (1993). A synaptic model of memory: long-term potentiation in the hippocampus. *Nature*, *361*(6407), 31-39.
- Cristofaro, M., & Giannetti, F. (2021). Heuristics in entrepreneurial decisions: A review, an ecological rationality model, and a research agenda. *Scandinavian Journal of Management*, *37*(3), 101170.
- Csilléry, K., Blum, M. G., Gaggiotti, O. E., & François, O. (2010). Approximate Bayesian computation (ABC) in practice. *Trends in Ecology and Evolution*, *25*(7), 410-418.
- Davies, P., & Gregersen, N. H. (2014). *Information and the nature of reality: From physics to metaphysics*. Cambridge University Press.
- De Klerk, S. (2015). The creative industries: An entrepreneurial bricolage perspective. *Management Decision*, *53*(4), 828-842.

- Dew, N. (2009). Serendipity in entrepreneurship. *Organization Studies*, 30(7), 735-753.
- Diaconis, P., & Ylvisaker, D. (1985). Quantifying prior opinion. In J. M. Bernardo, M. H. DeGroot, D. V. Lindley, & A. F. M. Smith (Eds.), *Bayesian Statistics* (Vol. 2, pp. 133-156). North Holland Press.
- Drucker, P. (2013). 7 Making effective decisions—And avoiding cognitive traps. In R. A. Baron (Ed.), *Enhancing Entrepreneurial Excellence: Tools for Making the Possible Real* (pp. 128). Edward Elgar Publishing.
- Entele, B. R. (2021). Impact of institutions and ICT services in avoiding resource curse: lessons from the successful economies. *Heliyon*, 7(2), e05961.
- Fuglsang, L. (2010). Bricolage and invisible innovation in public service innovation. *Journal of Innovation Economics Management*(1), 67-87.
- Funken, R., Gielnik, M. M., & Foo, M.-D. (2020). How can problems be turned into something good? The role of entrepreneurial learning and error mastery orientation. *Entrepreneurship Theory and Practice*, 44(2), 315-338.
- Gill, J. (2014). *Bayesian methods: A social and behavioral sciences approach* (Vol. 20). CRC press.
- Graziano, M. S. (2022). A conceptual framework for consciousness. *Proceedings of the National Academy of Sciences*, 119(18), e2116933119.
- Hammond, J. S., Keeney, R. L., & Raiffa, H. (1998). The hidden traps in decision making. *Harvard Business Review*, 76(5), 47-58.
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2005). *Cultures and organizations: Software of the mind*. McGraw-Hill.
- Kirzner, I. M. (2015). *Competition and entrepreneurship*. University of Chicago press.
- Kitamura, T., Ogawa, S. K., Roy, D. S., Okuyama, T., Morrissey, M. D., Smith, L. M., . . . Tonegawa, S. (2017). Engrams and circuits crucial for systems consolidation of a memory. *science*, 356(6333), 73-78.
- La, V.-P., & Vuong, Q.-H. (2019). bayesvl: Visually learning the graphical structure of Bayesian networks and performing MCMC with 'Stan'. *The Comprehensive R Archive Network (CRAN)*.
- Le, T.-T. (2022). Natural and social survival: the drivers of serendipity. In Q.-H. Vuong (Ed.), *A new theory of serendipity: Nature, emergence and mechanism* (pp. 75-90). De Gruyter.
- Maslow, A. H. (1981). *Motivation and personality*. Prabhat Prakashan.
- Meyer, M., Libaers, D., Thijs, B., Grant, K., Glänzel, W., & Debackere, K. (2014). Origin and emergence of entrepreneurship as a research field. *Scientometrics*, 98, 473-485.
- Minniti, M., & Bygrave, W. (2001). A Dynamic Model of Entrepreneurial Learning Entrepreneurship: Theory and Practice. *Journal of GEM*, 4, 41-52.
- Mintzberg, H. (1973). *Nature of managerial work*. Harper & Row.
- Naudé, W. (2010). Entrepreneurship, developing countries, and development economics: new approaches and insights. *Small Business Economics*, 34, 1-12.
- Nguyen, M.-H., & Jones, T. E. (2022a). Building eco-surplus culture among urban residents as a novel strategy to improve finance for conservation in protected areas. *Humanities & Social Sciences Communications*, 9, 426.
- Nguyen, M.-H., & Jones, T. E. (2022b). Predictors of support for biodiversity loss countermeasures and bushmeat consumption among Vietnamese urban residents. *Conservation Science and Practice*, 4(12), e12822.

- Nguyen, M.-H., Khuc, Q. V., La, V.-P., Le, T.-T., Nguyen, Q.-L., Jin, R., . . . Vuong, Q.-H. (2022). Mindsponge-based reasoning of households' financial resilience during the COVID-19 crisis. *Journal of Risk Financial Management*, 15(11), 542.
- Nguyen, M.-H., La, V.-P., Le, T.-T., & Vuong, Q.-H. (2022a). Bayesian Mindsponge Framework analytics: a novel methodological approach for social sciences and humanities. In Q.-H. Vuong, M.-H. Nguyen, & V.-P. La (Eds.), *The mindsponge and BMF analytics for innovative thinking in social sciences and humanities* (pp. 87-116). De Gruyter.
- Nguyen, M.-H., La, V.-P., Le, T.-T., & Vuong, Q.-H. (2022b). Introduction to Bayesian Mindsponge Framework analytics: an innovative method for social and psychological research. *MethodsX*, 9, 101808.
- Nguyen, M.-H., Le, T.-T., & Vuong, Q.-H. (2023). Ecomindsponge: A novel perspective on human psychology and behavior in the ecosystem. *Urban Science*, 7(1), 31.
- Nguyen, T. (2013). *Dr. Vuong Quan Hoang: Prevent "resource poisoning"*. <https://thanhvien.vn/van-hoa/tien-si-vuong-quan-hoang-chong-ngo-doc-nguon-luc-42437.html>
- Nguyen, V., & Pham, T. (2017). Knowledge management strategies, imitation, and innovation: an empirical study of Vietnamese firms. In J. Hong, R. S. Snell, & C. Rowley (Eds.), *Organizational learning in Asia* (pp. 85-108). Elsevier.
- Nonaka, I., & Konno, N. (1998). The concept of "Ba": Building a foundation for knowledge creation. *California Management Review*, 40(3), 40-54.
- Parker, S. C. (2018). Entrepreneurship and economic theory. *Oxford Review of Economic Policy*, 34(4), 540-564.
- Petkova, A. P. (2009). A theory of entrepreneurial learning from performance errors. *International Entrepreneurship and Management Journal*, 5(4), 345-367.
- Porter, M. E. (2011). *Competitive advantage of nations: creating and sustaining superior performance*. Simon & Schuster.
- Schumpeter, J. A. (2017). *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle*. Routledge.
- Sepehrdoust, H., & Shabkhaneh, S. Z. (2018). How knowledge base factors change natural resource curse to economic growth? *Technology in Society*, 54, 149-154.
- Solomon, E. A., Lega, B. C., Sperling, M. R., & Kahana, M. J. (2019). Hippocampal theta codes for distances in semantic and temporal spaces. *Proceedings of the National Academy of Sciences*, 116(48), 24343-24352.
- Thai, M. T. T., & Anh, N. H. (2016). The impact of culture on the creation of enterprises. *Journal for International Business and Entrepreneurship Development*, 9(1), 1-22.
- Tonegawa, S., Morrissey, M. D., & Kitamura, T. (2018). The role of engram cells in the systems consolidation of memory. *Nature Reviews Neuroscience*, 19(8), 485-498.
- Tran, H., Abbott, M., & Yap, C. J. (2017). How does working capital management affect the profitability of Vietnamese small-and medium-sized enterprises? *Journal of Small Business and Enterprise Development*, 24(1), 2-11.
- Tran, H. T., & Santarelli, E. (2014). Capital constraints and the performance of entrepreneurial firms in Vietnam. *Industrial and Corporate Change*, 23(3), 827-864.
- Tran, T. Q., Huong, V. V., Doan, T. T., & Tran, D.-H. (2016). Corruption, provincial institutions and manufacturing firm productivity: New evidence from a transitional economy. *Estudios de Economía*, 43(2).

- Van Vu, H., Tran, T. Q., Van Nguyen, T., & Lim, S. (2018). Corruption, types of corruption and firm financial performance: New evidence from a transitional economy. *Journal of Business Ethics*, 148, 847-858.
- Vehtari, A., & Gabry, J. (2019). *Bayesian Stacking and Pseudo-BMA weights using the loo package*. In (Version loo 2.2.0) <https://mc-stan.org/loo/articles/loo2-weights.html>
- Vehtari, A., Gelman, A., & Gabry, J. (2017). Practical Bayesian model evaluation using leave-one-out cross-validation and WAIC. *Statistics and computing*, 27(5), 1413-1432.
- Vietnam General Statistics Office. (2017). *Vietnamese enterprises: First 15 years of the Century (2000-2014)*. <https://www.gso.gov.vn/wp-content/uploads/2020/04/Ruot-sach-trang-2020.pdf>
- Vu, T. A. (1994). *Vietnam's economic reform: Results and problems*. Social Science Publishing House.
- Vuong, Q.-H. (2016). Survey data on entrepreneurs' subjective plan and perceptions of the likelihood of success. *Data in brief*, 6, 858-864.
- Vuong, Q.-H. (2018a). The financial economy of Viet Nam in an age of reform, 1986–2016. In U. Volz, P. Morgan, & N. Yoshino (Eds.), *Routledge handbook of banking and finance in Asia* (pp. 201-222). Routledge.
- Vuong, Q.-H. (2018b). The (ir)rational consideration of the cost of science in transition economies. *Nature Human Behaviour*, 2, 5. <https://doi.org/10.1038/s41562-017-0281-4>
- Vuong, Q.-H. (2020). Reform retractions to make them more transparent. *Nature*, 582, 149.
- Vuong, Q.-H. (2022). *A new theory of serendipity: Nature, emergence and mechanism*. De Gruyter.
- Vuong, Q.-H. (2022). *The kingfisher story collection*. <https://www.amazon.com/dp/B0BG2NNHY6>
- Vuong, Q.-H. (2023). *Mindsponge Theory*. De Gruyter.
- Vuong, Q.-H., Bui, Q.-K., La, V.-P., Vuong, T.-T., Nguyen, V.-H. T., Ho, M.-T., . . . Ho, M.-T. (2018). Cultural additivity: behavioural insights from the interaction of Confucianism, Buddhism and Taoism in folktales. *Palgrave Communications*, 4, 143.
- Vuong, Q.-H., La, V.-P., Vuong, T.-T., Nguyen, H.-K. T., Ho, M.-T., & Ho, M.-T. (2020). What have Vietnamese scholars learned from researching entrepreneurship? A Systematic review. *Heliyon*, 6(4), e03808.
- Vuong, Q.-H., Le, T.-T., Jin, R., Khuc, Q. V., Nguyen, H.-S., Vuong, T.-T., & Nguyen, M.-H. (2023). Near-suicide phenomenon: An investigation into the psychology of patients with serious illnesses withdrawing from treatment. *International Journal of Environmental Research and Public Health*, 20(6), 5173.
- Vuong, Q.-H., Le, T.-T., La, V.-P., & Nguyen, M.-H. (2022). The psychological mechanism of Internet information processing for post-treatment evaluation. *Heliyon*, 8(5), E09351.
- Vuong, Q.-H., & Napier, N. K. (2015). Acculturation and global mindsponge: an emerging market perspective. *International Journal of Intercultural Relations*, 49, 354-367.
- Vuong, Q.-H., Nguyen, M.-H., & La, V.-P. (2022a). *The mindsponge and BMF analytics for innovative thinking in social sciences and humanities*. De Gruyter.
- Vuong, Q.-H., Nguyen, M.-H., & La, V.-P. (2022b). Updated protocol for performing BMF analytics using bayesvl. In Q.-H. Vuong, M.-H. Nguyen, & V.-P. La (Eds.), *The mindsponge and BMF analytics for innovative thinking in social sciences and humanities* (pp. 301-370). De Gruyter.

- Vuong, Q.-H., Nguyen, M.-H., & Le, T.-T. (2021). *A mindsponge-based investigation into the psycho-religious mechanism behind suicide attacks*. De Gruyter.
- Vuong, Q. H., La, V. P., Vuong, T. T., Hoang, P. H., Ho, M. T., Ho, M. T., & Nguyen, H. K. T. (2020). Multi-faceted insights of entrepreneurship facing a fast-growing economy: A literature review. *3*(1), 25.
- Vuong, Q. H., & Napier, N. K. (2014). Resource curse or destructive creation in transition: Evidence from Vietnam's corporate sector. *Management Research Review*, *37*(7), 642-657.
- Vuong, Q. H., Nhue, D. V., Van Houtte, D., & Tran, T. D. (2011). The entrepreneurial facets as precursor to Vietnam's economic renovation in 1986. *The IUP Journal of Entrepreneurship Development*, *8*(4), 6-47.
- Wennekers, S., & Thurik, R. (1999). Linking entrepreneurship and economic growth. *Small Business Economics*, *13*, 27-56.