



The new Viet rationale: An empirical study on the degree of rationality in Vietnamese undergraduate students

Anh Do^{*1}, Phuc Huynh^{*2}, and Muhammad Shalahudin^{*3}

¹ UWC Mahindra College, Pune, Maharashtra, India

² VNU-HCM High School for the Gifted, Ho Chi Minh City, Vietnam

³ Central Toronto Academy, Toronto, Ontario, Canada

* Co-first author



Abstract

More than three decades have passed since the introduction of the *Đổi Mới* reform (1986), marking Vietnam's transition to a socialist-oriented market economy. The drastic shift from a command economy resulted in sweeping educational and social changes, drawing from a plethora of external influences (Drummond, 2006). These changes are incoherent with the contextual periods in which many of the world's mainstream psychological and economic theories emerged, such as *Homo Economicus*. The empirical study explores the degree of rational reasoning in Vietnamese undergraduate students on a range of metrics and its implications in the Vietnamese context. Through qualitative and quantitative analysis of a stratified sample in Ho Chi Minh City, the results suggest that undergraduate students possess a high degree of self-criticism while lacking strategic considerations when faced with situations involving game theory. The overall result shows that there is a positive relationship between the number of years in college and the degree of rationality, with male participants outperforming female participants. This paper ends with a discussion of possible factors (i.e. media and Confucianism) related to these disparities and the potential political, economic, and social implications of the findings.

Introduction

The notion of rationality underpins the explanations of human behavior in a wide range of disciplines, especially classical economics. Traditional research bodies abide by the conventional definition of rational decision-making, in which individuals have a set of static and well-defined preferences and will act in accordance with the maximization of utility (Rabin, 1998). On the contrary, contemporary researchers, most notably Monaghan (2003), critique the *Homo economicus* model through the body of evidence in uncalculated engagement in altruistic activities. There is currently a heated debate on the social implications of human rationality, with one side equating rational reasoning to political and economic progress (Pinker, 2018), and the other tragedy of the commons (Raworth, 2017).

More fundamentally, experimental findings suggest that studies within social sciences are skewed toward 12% of the global population that is Western, Educated, Industrialized, Rich, and Democratic (Henrich, 2010). Consequentially, the limited generalizability hinders advancement in the understanding of Eastern contexts. This empirical study aims to examine the degree of rational reasoning of Vietnamese undergraduates based on a variety of parameters and discuss its contributing factors in the Vietnamese context.

Methodology

1. Participants

The study conducts five different rationality indicators on a stratified sample where the distribution of gender and ethnic diversity are in accordance with those of the overall four-year college population. All participants are between the ages of 18 and 23. Participants receive a compensation of more than double the area-I minimum wage (Article 3 of Decree 38, Vietnam Labour Law, 2022). The interviewer hands out a rapport prior to each individual interview, where participants answer 5 different questions or prompts.

2. Measures

Expected Utility: This measure bases its foundation on the modern mathematical extension of the classical notion that rational individuals always choose the option that provides the highest expected utility (Grant, 2007). The question is phrased as follows:

"Your parents are selling their house. They could either choose to sell it at a down payment of 50,000 for 3 years with an 8% yearly interest or 155,000 single payment. They might need some money for diabetes treatment this year, assuming the cost is at Vietnam's average. They ask for your opinion. How would you decide? Explain your answer."

The first option is to sell the house at a single payment of 155,000 USD. The second option is to sell the house at a down payment of 50,000 USD for 3 years at a yearly interest rate of 8%, yielding 175,205.6 USD. The most optimum answer yields the highest expected utility, which can be subjective to each individual (Shepsle and Bonchek, 1997). Hence, there is more than a single binary framework to determine the utility value of a decision. This study aims to consider the various factors at play in the given scenario, which are:

- a. Consideration of diabetes treatment: The question assumes that the participant values the lives of his or her parents. Utility in this scenario consists of prioritizing diabetes treatment to a certain degree.
- b. Financial gain and planning: In consideration of the greater total return from the first option, it is rational for an individual to restrain the desire for instant return in order to accumulate greater gain in the long run, similar to that of the marshmallow dilemma (Mischel & Baker 1975). This analysis also accounts for the existence of other market options, where an individual opts for the single payment to reinvest in higher-return projects.
- c. Self-awareness of one's knowledge and capability: The acknowledgment of one's limits of market and monetary understanding is indicative of risk aversion and epistemic humility, justifying the claim for rationality (Murray, 2008). In this context, one may choose the down payment due to the acknowledgment of their inability to effectively reinvest. The above considerations ensure a result of the highest expected utility within the individual's capability.
- d. Argumentative consistency: A non-contradictory argumentation of the answer is denotative of a thorough analysis by the participant. This consistency is indicative of a logical thought process, where the interviewee is aware of the statements he or she makes and can arrange them in a manner that supports the overarching argument. Furthermore, consistency in an individual's arguments is indicative of an absence of emotional impulses and external pressures (Johnson-Laird et al., 2004).
- e. Recognition of external variables: Accounts for external variables display the interviewee's ability to assess risks, which may include inflation, unexpected expenses, natural disasters, etc. This ability for risk assessment enhances the accuracy in determining the utility of a decision.

Game theory: Rational individuals make strategic decisions based on the anticipated behavior of others. They consider the possible outcomes of different actions and choose the one that maximizes their payoffs. The framework is presented as follows:

"You are part of a group project you don't enjoy working on. The professor only allows for equal distribution of the final score. The score is then marked as "pass" or "fail" – no rankings at the end of the day like other courses. There are two students in your group, you and one of the best students in your class. One person working is enough to get a "pass" on the course. Free-riding this project would grant you the time to focus on courses that do have rankings. Without knowing whether the other student would put in the effort, would you work or free-ride? Explain your answer."

As the world operates on imperfect information, participants are unaware if their partner is putting in effort in the first place. Factors to consider:

- i. A 100% contribution by one individual is sufficient to achieve a pass in the course
- ii. The final result is binary: only pass or fail
- iii. The individual in the question does not enjoy the professor's project
- iv. The time spent on this project can be strategically utilized for other courses which are graded on a scale
- v. The individual is unable to certify the amount of effort contributed by the partner

Table 1. Outcomes in relation to the amount of effort put into the project

		Degree of effort made by you		
		100%	50%	0%
Degree of effort made by your work partner	100%	Pass - No time spared	Pass - some time spared	Pass - Much time spared
	50%	Pass - No time spared	Pass - some time spared	Fail - Much time spared
	0%	Pass - No time spared	Fail - some time spared	Fail - Much time spared

Table 2. The value of each outcome in relation to the amount of effort put into the project

		Degree of effort made by you		
		100%	50%	0%
Degree of effort made by your work partner	100%	10	25	100
	50%	5	60	-50
	0%	-10	-100	-25

Of all the options available, not one yields the best outcome. Each option is associated with its risks and rewards. As the effort the individual in question contributes increases, the time available for other courses decreases. As the effort the individual in question contributes decreases, the risk of course failure increases.

With the advent of a partner, the question becomes how the individual can best evaluate their partner to obtain the best outcome for him or herself.

This study assumes the individual in question is a rational player. Not knowing what the partner would do, the individual in question would examine all of the possible scenarios. Upon putting in 100% effort, the net value totals to 5. Upon putting in 50% effort, the net value totals to -15. Upon putting in no effort, the net value totals to 25. Hence, the hypothetical individual would choose to put no effort to achieve the highest net value.

Assuming the partner is also a rational player, the partner would make a similar decision, leading to a situation worse for both players.

Nonetheless, there are mutually beneficial options. When both players contribute to the project, the yield of both players is positive. Moreover, when both players make equal contributions to the project, the value received by both players is equal and positive. Then by having both parties simultaneously put in effort of 50%, both parties would yield a value of 60 each: the highest net value when considering both parties. Therefore, the best scenario is when both parties put in 50% effort each.

Without the knowledge of the partner's strategy, both players would choose the mutually worse-off option. Therefore, the best course of action is a pre-project dialogue. Hence, the interviewee should demonstrate an interest in communicating with the partner and examine the risks and rewards associated with each option.

Empiricism: Rational individuals seek evidence-based information to make decisions rather than relying on subjective beliefs, tradition, or dogma (Pinker, 2021). This is an interactive assessment, where both the participant and the researcher are recorded. The framework is as follows:

"Tell me something newsworthy."

"Where did you read that from?"

"Is that where you get most of your daily information intake?" or "If not, where do you get most of your information?"

The study determines the level of empiricism displayed by an individual by considering the two factors:

- a. **Consideration of multiple news sources:** By consulting a variety of news sources, one demonstrates a willingness to reject dogma and embrace a more multi-dimensional interpretation of current events. Hence, the individual becomes better equipped to form an independent perspective. Through this practice, the individual exhibits a commitment to empiricism and an aversion to opinion-based journalism (Molyneux, 2017).
- b. **Reliability of a news source:** In this criterion, the participant has to include a news source in his or her response. The reliability of a news source is determined using the CRAAP method: currency, relevance, authority, accuracy, and purpose (Lewis, 2018). However, since the study examines the source rather than the information itself, currency and relevance are overlooked.

Self-criticism: Rational individuals are willing to reflect and critique their beliefs and assumptions in light of new evidence, demonstrating epistemic humility (Kallestrup & Pritchard, 2016). This is an interactive assessment, where both the participant and the researcher are recorded. The framework is as follows:

"Do you find any pressing issues with the city?"

"Can you suggest ways to resolve them?"

With prior research on the problems, the interviewer refutes the participant's answer, avoiding logical fallacies in the rebuttals. Towards the end, the interviewer agrees partially and proceeds. The whole conversation is recorded for evaluation.

The ability for self-criticism is determined by three factors:

- a. **Reaction to an opinion contradictory to one's own:** An irrational individual demonstrates a limited sense of emotional self-control, resulting in a harsh reaction. This is identified by an individual's facial expression or verbal comments attacking aspects unrelated to the criticism of the proposal. Conversely, rational individuals would not display pronounced displeasure against the interviewer's criticism.



- b. Willingness to reflect on beliefs and assumptions: Re-assessment of beliefs and assumptions is formative to self-development. This is also indicative of epistemic humility through self-awareness, critical reasoning, and adaptability. All of the above are proven to lead to better decisions.
- c. Ability to effectively defend one’s opinion: Although this factor does not directly indicate self-reflective tendencies, it does stand to critically disprove the interviewer's rebuttal. The counterargument is further evaluated to determine its consistency and mechanism. Hence, this can further complement the individual’s self-reflection.

Bayesian reasoning: Rational individuals use probabilistic reasoning to make decisions in the face of uncertainty. Participants are asked to rank the following scenarios on their likelihood to become a reality from highest to lowest.

1. A camel roaming the streets of Saigon
2. A pro-LGBTQ national assembly member elected in an area with a large population identifying with the LGBTQ community
3. A girl qualifying for the International Mathematics Olympiad
4. Someone winning Vietlott
5. A national assembly member being part of the LGBTQ community
6. Nguyen Xuan Phuc returning to office
7. A girl with both of her parents graduating from MIT and winning 1st place once, and 2nd place once in the national mathematics Olympiad qualifying for the International Mathematics Olympiad
8. A camel escaping captivity from Thao Cam Vien Park and roaming around near Thao Cam Vien
9. A magnitude 9 earthquake hitting Ho Chi Minh City
10. Someone winning Vietlott via connections they have with the organizing team

Eight out of ten events come in pairs, in which one scenario encompasses the other. Numbers 6 and 9 are miscellaneous events, inserted to distract the participants from identifying the underlying mechanism of the question. The participants must therefore rank the events so that the more-probable event would rank higher than the less-probable event of the same pair.

Pairing number	More-probable event	Less-probable event
1	1	8
2	5	2
3	3	7
4	4	10

3. Evaluation

The marking scheme for each assessment depends on the number of its sub-criteria. The question on expected utility is on a scale of 5, game theory of 3, empiricism of 4, self-criticism of 3, and Bayesian reasoning of 4. Each individual's overall score is comprised of the percentage score of each question, where the question on expected utility is threefold and the question on self-criticism is twofold. This is due to the low complexity of the questions' phrasing and general applicability.

Researchers are blindfolded in the process of evaluating the transcripts in order to avoid bias regarding gender and ethnicity, although evaluation of the recordings is necessary to identify tones and emotional cues. Accounting for anchoring heuristics, the team carries out the marking process 5 times with two blindfolds: the evaluators are unaware of how well a participant scores in other questions and rounds of evaluation.

Results

Table 1: Overall results in undergraduate students

	Expected utility	Empiricism	Self-criticism	Game theory	Bayesian	Overall
Mean value	3.7	2.3	2.3	0.9	2.5	6.3
Mean percentage	0.74	0.575	0.77	0.3	0.625	0.63
Percentage standard deviation	0.13	0.19	0.21	0.23	0.18	0.12

Table 2: Average final mark by year(s) spent in univerisity

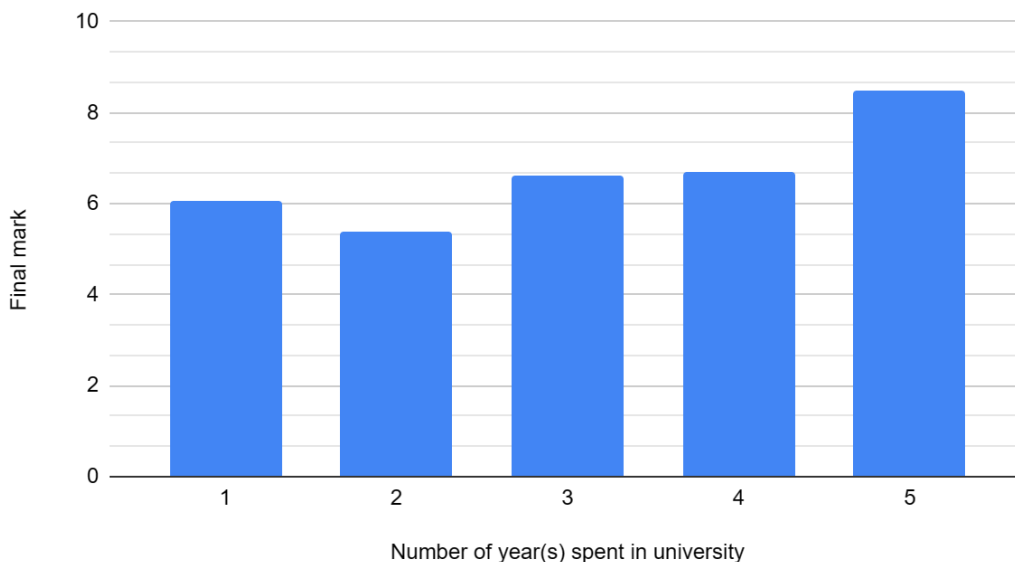
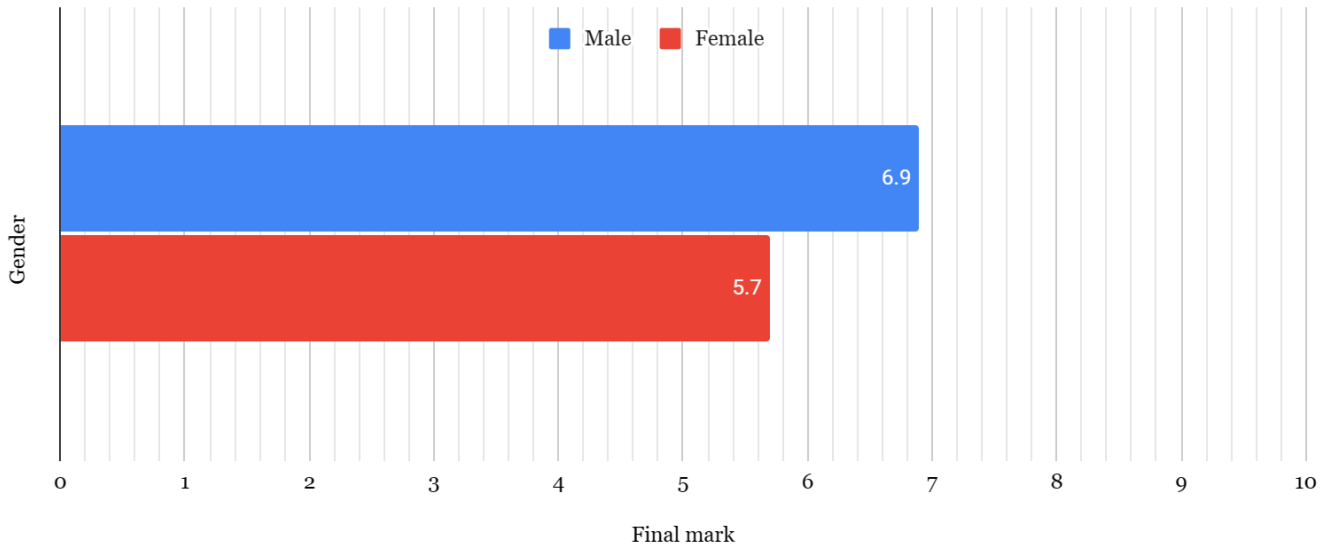


Table 3: Average final marks of male and female participants



Discussion

The overall results indicate a relatively high level of rational reasoning. A majority of participants demonstrated notable impartiality and epistemic humility. This contradicts assumptions regarding individuals living in autocratic states, where civilians are frequently described as blindly obedient and trusting (White, 2020). The result on self-criticism tops the chart, as recordings and transcripts show a high degree of self-correction, willingness to evaluate one's own opinions, and emotional control. The worst-performing category in game theory: there is generally an absence of strategic pre-emption, and most of the responses signal short-term risk aversion and moral responsibilities. There is also a lag in Bayesian reasoning, where the majority of responses contain availability heuristics and emotional impulses. Indicators of empiricism are moderate, though can be undermined by the nature of censorship in Vietnam (Cain, 2013). We observe a similar pattern on the expected utility metric: moderately rational and short-term.

One possible explanation for these onsets is how international media takes shape in the Vietnamese landscape. Although there is increasing exposure to foreign media, most of which is apolitical and of East Asian origin (Nguyen, 2021). Unlike their predecessors, young generations adopt the status quo of soft authoritarian governance and moderate censorship, given no exposure to mass political unrest. This goes in line with the evidence by Holbrook (2020): there is limited influence from families on the political views of young adults. Another aspect to consider is Chinese influence on Vietnamese public higher education, where Confucianist and hierarchical practices are prevalent (Welch, 2009). As participants are enrolled in public universities, this can contribute to the high degree of epistemic humility. Notably, unlike the Chinese model, these Confucianist practices manifest in a considerably more nuanced manner, resulting in emotional restraint and caution instead of blind obedience—an emergent property of Vietnam's softer and more pluralistic authoritarian model (Malesky, 2021). Although some

responses rely on righteousness, the degree of which is relatively low and nuanced, a by-product of the country's current ardently progressive status and cooperative atheist model (Nguyen, 2023). The above may also suggest a reason for the relatively high political stability nationwide.

The results show an outperformance in male participants by a significant margin. This disparity can be attributed to the cumulative effect of traditional sexist narratives well-studied in the Western world, where female children's upbringings discourage confrontation and critical behaviors (McCune & Matthews, 1975). This consequentially hinders the development of rational reasoning, intertwining with evidence of sexism imposed by Confucianism (Mun, 2015). However, the team is cautious that both female and male participants are interviewed by a male researcher, which can pose a disadvantage to female participants, as mixed-sex conversations contain more overlaps and interruptions (Turner et al., 1995).

The experiment also records a positive relationship between the degree of rational reasoning and the number of years in university. This indicates that university curriculums may impact students' behavioral cognition, which goes in line with research bodies suggesting that economics students behave more selfishly than the general population (Gerlach, 2017). Although younger subjects are more consistent than older subjects on a larger scope (Choi et al., 2011), age in this context is relatively immaterial, and levels of education within the same age group have a more pronounced impact.

Limitations

We want to discuss certain hindrances the nature of the study poses. Firstly, the generalization of the results is to proceed with caution, given the foreseen high degree of sampling error in the field (Lindner et al., 2001). Secondly, a male researcher conducted all interviews, which is an advantageous constant but may inflict gender influences (Turner et al., 1995). Thirdly, the quantification of results can differ depending on the researchers' niche, calling for collective effort in repeating the experiment on a larger scale. Hence, the generalization of the study can partially reach an inter-provincial or nationwide scale.

Implications

Outcomes of studies like this add a crucial layer to the understudied field of sociology in Vietnam, particularly in examining public political response and participation through individual behaviors. Concurrently, our results contribute to the limited research bodies on authoritarian regimes, answering the newfound global attention on Vietnam and China after the COVID-19 era (Malesky, 2021) and propelling efforts to neutralize interpretations of Asian governmental models. In the discipline of behavioral economics, by contextualizing our analysis, the team strives to provide a less WEIRD (Western, Educated, Industrial, Rich, and Democratic) alternative for consumer analysis, thereby enhancing firm decisions and policymaking in comparable East and Southeast Asian economies and enriching the psychology research landscape (Wong & Cowden, 2022). The understanding of reasoning mechanisms in young

Vietnamese also serves as a robust framework for regulations of socially significant matters like the institutions of education, banking, and marriage (Khuong et al., 2022).

Bibliography

- Bonchek, M. S., & Shepsle, K. A. (1997). *Analyzing politics. Rationality, Behavior and Institutions*.
- Cain, G. (2013). Kill one to warn one hundred. *The International Journal of Press/Politics*, 19(1), 85–107. <https://doi.org/10.1177/1940161213508814>
- Choi, S., Kariv, S., Müller, W., & Silverman, D. (2011). Who is (More) rational? <https://doi.org/10.3386/w16791>
- Drummond, L. (2006). Gender in Post-Doi Moi Vietnam: Women, desire, and change. *Gender Place and Culture*, 13(3), 247–250. <https://doi.org/10.1080/09663690600700998>
- Grant, S., & Van Zandt, T. (2007). Expected utility theory. *Social Science Research Network*. <https://doi.org/10.2139/ssrn.1033982>
- Gerlach, P. (2017). The games economists play: Why economics students behave more selfishly than other students. *PLOS ONE*, 12(9), e0183814. <https://doi.org/10.1371/journal.pone.0183814>
- Henrich, J., Heine, S., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29. <https://doi.org/10.1038/466029a>
- Johnson-Laird, P. N., Girotto, V., & Legrenzi, P. (2004). Reasoning From Inconsistency to Consistency. *Psychological Review*, 111(3), 640–661. <https://doi.org/10.1037/0033-295x.111.3.640>
- Kallestrup, J., & Pritchard, D. (2016). From epistemic Anti-Individualism to intellectual humility. *Res Philosophica*, 93(3), 533–552. <https://doi.org/10.11612/resphil.2016.93.3.2>
- Khuong, N. V., Phuong, N. T., Liem, N. T., Thuy, C. T. M., & Son, T. H. (2022). Factors Affecting the Intention to Use Financial Technology among Vietnamese Youth: Research in the Time of COVID-19 and Beyond. *Economies*, 10(3), 57. <https://doi.org/10.3390/economies10030057>
- Lewis, A. B. (2018). What does bad information look like? using the CRAAP test for evaluating substandard resources. *Issues in Science and Technology Librarianship*, 88. <https://doi.org/10.29173/istl1724>
- Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of agricultural education*, 42(4), 43-53.
- Malesky, E. J. (2021). Enhancing Research on Authoritarian Regimes through Detailed Comparisons of China and Vietnam. *Problems of Post-Communism*, 68(3), 163–170. <https://doi.org/10.1080/10758216.2020.1865822>
- McCune, S., & Matthews, M. (1975). Eliminating Sexism : Teacher Education and Change. *Journal of Teacher Education*, 26(4), 294–300. <https://doi.org/10.1177/002248717502600404>
- Mischel, W., & Baker, N. L. (1975). Cognitive appraisals and transformations in delay behavior. *Journal of Personality and Social Psychology*, 31(2), 254–261. <https://doi.org/10.1037/h0076272>
- Molyneux, L. (2017). Multiplatform news consumption and its connections to civic engagement. *Journalism: Theory, Practice & Criticism*, 20(6), 788–806. <https://doi.org/10.1177/1464884917730216>

- Mun, J. (2015). The Impact of Confucianism on Gender (In)Equality in Asia. *Georgetown Journal of Gender & Law*, 16, 633.
<https://heinonline.org/HOL/LandingPage?handle=hein.journals/grggen16&div=29&id=&page=>
- Murray, T. (2008, August). Exploring epistemic wisdom: Ethical and practical implications of integral theory and methodological pluralism for collaboration and knowledge-building. In *1st Biannual Integral Theory Conference, John F. Kennedy University, Pleasant Hill, CA*.
- Nguyen, A., & Özçağlar–Toulouse, N. (2021). Nation branding as a market-shaping strategy: A study on South Korean products in Vietnam. *Journal of Business Research*, 122, 131–144.
<https://doi.org/10.1016/j.jbusres.2020.08.029>
- Pinker, S. (2018). *Enlightenment Now: the case for reason, science, humanism, and progress*.
<http://ci.nii.ac.jp/ncid/BB27073425>
- Pinker, S. (2021). *Rationality: What It Is, Why It Seems Scarce, Why It Matters*. Penguin UK.
- Rabin, M. (1998). Psychology and Economics. *Journal of Economic Literature*, 36(1), 11–46.
<http://www.jstor.org/stable/2564950>
- Raworth, K. (2017). A Doughnut for the Anthropocene: humanity’s compass in the 21st century. *The Lancet Planetary Health*, 1(2), e48–e49. [https://doi.org/10.1016/s2542-5196\(17\)30028-1](https://doi.org/10.1016/s2542-5196(17)30028-1)
- Turner, L. H., Dindia, K., & Pearson, J. C. (1995). An investigation of female/male verbal behaviors in same-sex and mixed-sex conversations. *Communication Reports*, 8(2), 86–96.
<https://doi.org/10.1080/08934219509367614>
- Welch, A. (2009). Internationalisation of Vietnamese Higher Education: retrospect and prospect. In *Higher education dynamics* (pp. 197–213). https://doi.org/10.1007/978-90-481-3694-0_14
- White, J. D. (2020). The enduring appeal of autocrats. *Cambridge Review of International Affairs*, 33(6), 925–930. <https://doi.org/10.1080/09557571.2020.1838820>
- Wong, P. T. P., & Cowden, R. G. (2022). Accelerating the science and practice of psychology beyond WEIRD biases: Enriching the landscape through Asian psychology. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.1054519>