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Mindspongeconomics

Van Quy Khuc

VietKAP, Hanoi 100000, Vietnam

Email: qvkhuc.4vina@gmail.com

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Van Quy Khuc[1]

Abstract

Economics has evolved over time, and it helps to explain and shape the human's economic activities. Although economics is useful to humans' lives, it is either failed or insufficient to justify many real-world cases, ranging from humans' rapid and/or unpredictable progress in the information age to decision making-selecting mechanism, optimization, gross domestic product (GDP) matter, and so on, raising concerns about contemporary economics' significant limitations, inspiring us to rethink, redefine and reform it in new contexts. Interestingly, the Mindsponge theory and many disciplines have been formed recently, allowing me to develop a new branch of applied economics known as "mindspongeconomics – mindspongecon". Mindspongecon studies how one makes decision using both rational and irrational thinking mechanism that employs the serendipity-mindsponge-3D knowledge management system based on a set of dynamic core values to find high-value choices/solution addressing many economics' shortcomings. From my perspective, it is time to update, learn and apply this "new economics" to tackle many existing issues and/or to achieve humankind's long-term development goals.

Keywords: information, core values, environmental values, irrational thinking, optimization, serendipity, new economics

*Corresponding author, Van Quy Khuc, email: qvkhuc.4vina@gmail.com

1. Is mindspongecon a new decision science?

1.1. Economics' matters

Making choices is often hard for humans, but we must do so many times in our lifetimes. From this view, how to make a high-quality/high value decision) is far more important question/issue. In economics, a decision theory, a rational person is used to either evaluate or perform the choices/decisions. A rational person is defined as someone who is sensible and can make decisions based on logic rather than emotion. But there are many problems now with contemporary economics. This decision theory cannot explain why some people are able to find high-value solutions/options beyond

[1] SCDM lab, VietKAP, Hanoi 100000, Vietnam

expectation, or why humans achieve unpredictability in economic growth in the face of diminishing resources (Figure 1).

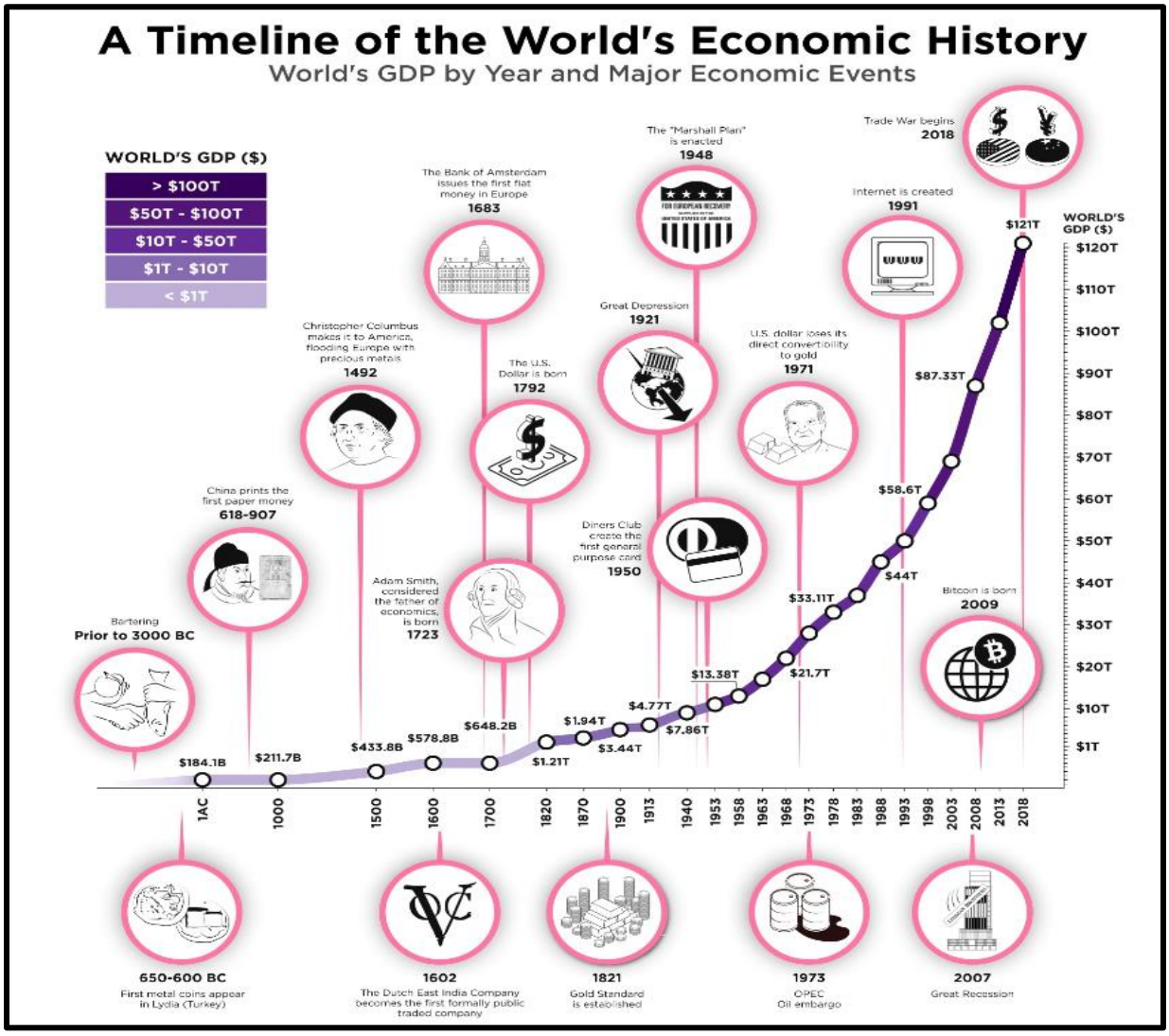

Figure 1. The world's economic growth by time.

Source: https://howmuch.net/articles/timeline-us-history

Apart from the optimization matter, many questioned economics because it failed to correctly calculate gross domestic product (GDP) [1–3], which results in many unfavorable consequences such as inequality, environmental problems, etc. In addition, according to many scholars [4], economics is even deemed broken. They argue that mainstream (neoclassical) economics has failed to provide solutions to our problems, from climate change to inequality, yet it remains dominant in government, the Bank of England, academia, and other economic institutions. From these views, we could argue that current economic theory has many significant limitations that motivate us to reconsider, redefine, reform it in new contexts [4,5].

1.2. Introduction to a new economics: Mindspongecon

In this section, I would like to briefly introduce mindspongeconomics (**mindspongecon – new economics**) as a social science studying the nature, mechanism and processes of the core value-based decision-making using rational and irrational thinking mechanism/method associated with the serendipity-mindsponge-3D knowledge management system to achieve/find high value solutions/outcomes desired. Mindspongecon is a special advancement and/or expansion of the mindsponge theory [6,7] and many attributes of relevant disciplines such as sociology, psychology, behavioral economics [8], neuroeconomics [9], welfare economics [10], experimental economics [11].

Put it simply, mindspongecon is a multifilter-based information processing system with an evaluation mechanism linked to pre-set core values. These core values are the basis for actors such as individuals, households, enterprises to compare and evaluate the received information and ultimately to make decisions [12]. The quality as well as speed of this decision-making depends on many factors such as information processing capacity, information quality associated with the clarity, details, and priority of core values in their mindset/perception (Figure 2).

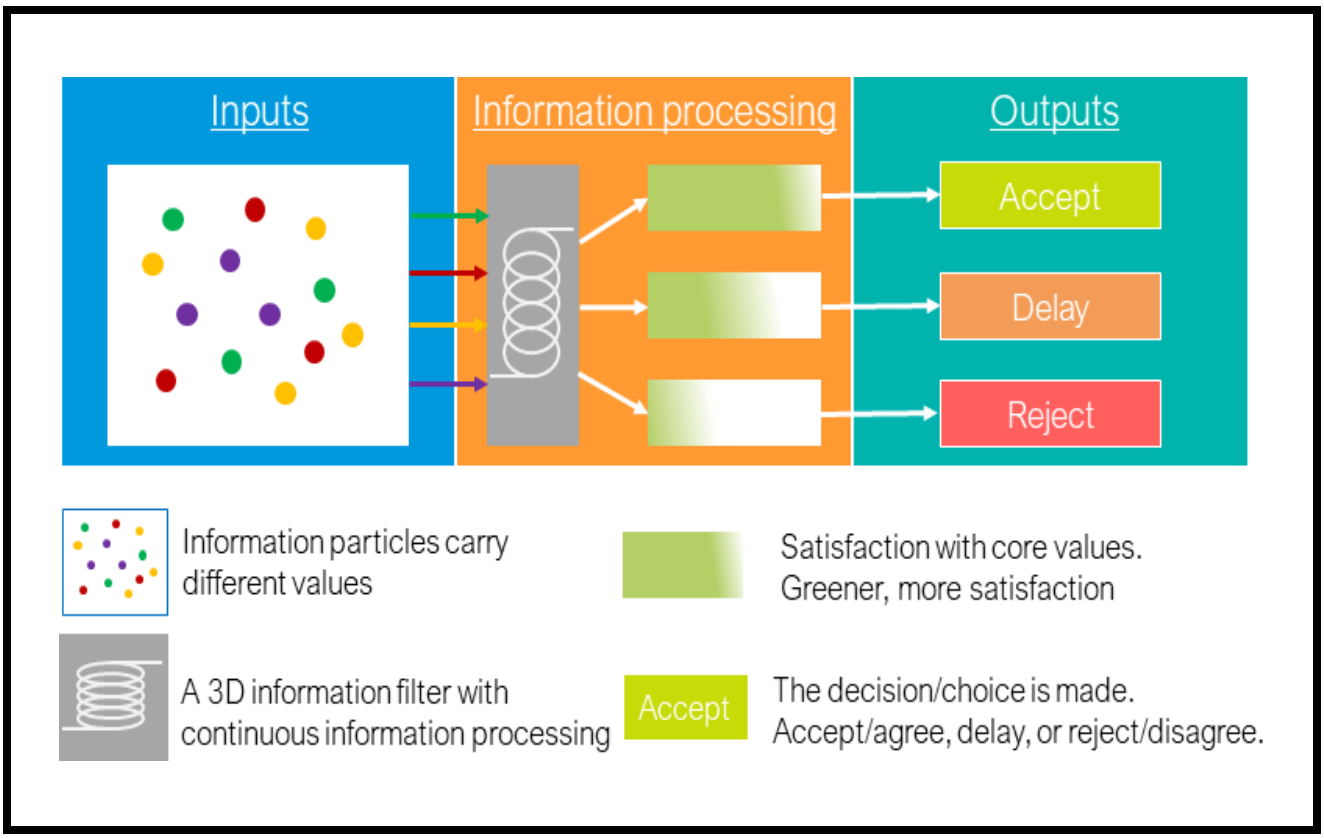

Figure 2. Mindspongeconomics framework for decision-making.

Source: Own elaboration

Typical core values of the Mindspongecon's decision-making framework are:

- Costs and benefits
- Use values
- Social values
- Environmental values
- Preference
- Trust
- Scarcity…

There are two main features of the decision-making framework's core values:

- The core values are not fixed; rather, some can be dynamic and/or changeble over time and across social space.
- The order of importance of core values (core values' ranking) differs depending on the actor(s) and conditions associated with living environments and/or social spaces.

2. What makes mindspongecon different, special and unique?

2.1. Mindspongecon helps explain decision-making mechanism and/or predict possible choices/decisions

Unlike contemporary economic theories that mainly focus on modelling economic relationships (e.g. the Law of Supply and Demand…), mindspongecon enriches modern economic theory by supplementing decision (choice)-making mechanisms with the non-linear thinking thanks to serendipity strategy. Mindspongecon can help explain the invisible hand in economics, answer three basic option-related questions of the economy thoughtfully and clearly: What to produce? How to produce? Produce for whom? This is thanks to the dynamics of the core value systems of economic agents that are formed and developed over a period of time.

Mindspongecon can help to unravel economic relationships and/or shape economic activities associated with the decision making/selection process in terms of consumption, production, distribution of goods and services of economic agents.

- For producers and suppliers, for example, mindspongecon helps assess whether the goods and services they intend to produce are competitive, economically beneficial, and preferred or not. For economic cooperation, for instances, mindspongecon allows the stakeholders to evaluate cooperation opportunities based on the information received through the exchange process and different channels. Based on the level of credibility, economic efficiency when using resources, the degree of compatibility in investment preferences, the stakeholders then consider whether to make economic cooperation decisions or not.
- For consumers, through filtering information about goods and services, mindspongecon allows them to assess the suitability, usefulness, reliability,

scarcity and prices. The more a good or service meets the core values, the more likely it is to be purchased.

- For the government/policymakers who are responsible for formulating economic policies, mindspongecon can also be applied. For example, in order to encourage the public's participation in the program of using/prioritizing Vietnamese goods, mindspongecon allows proposals of incentives based on the core cognitive characteristics of mindsponge. The policy will have a higher chance of success if it satisfies more of the core values of the targeted audience.

2.2. Mindspongecon aids in the explanation of high value solutions/decisions/choices found, correct optimization matter, and so on.

Mindspongecon has many attributes, but one of the most important is that it can justify and assess the quality of actors' decisions (choices) based on the extent to which core values are applied. In this sense, this theory combined with 3D theory [12] and serendipity theory [13] investigates how economic agents' ability to seek useful information for making high-quality decision (high value solutions) [13–15]. This is because mindspongecon use both rational and irrational thinking (the non- linear thinking thanks to serendipity strategy) for finding the best decision (Figure 3, 4).

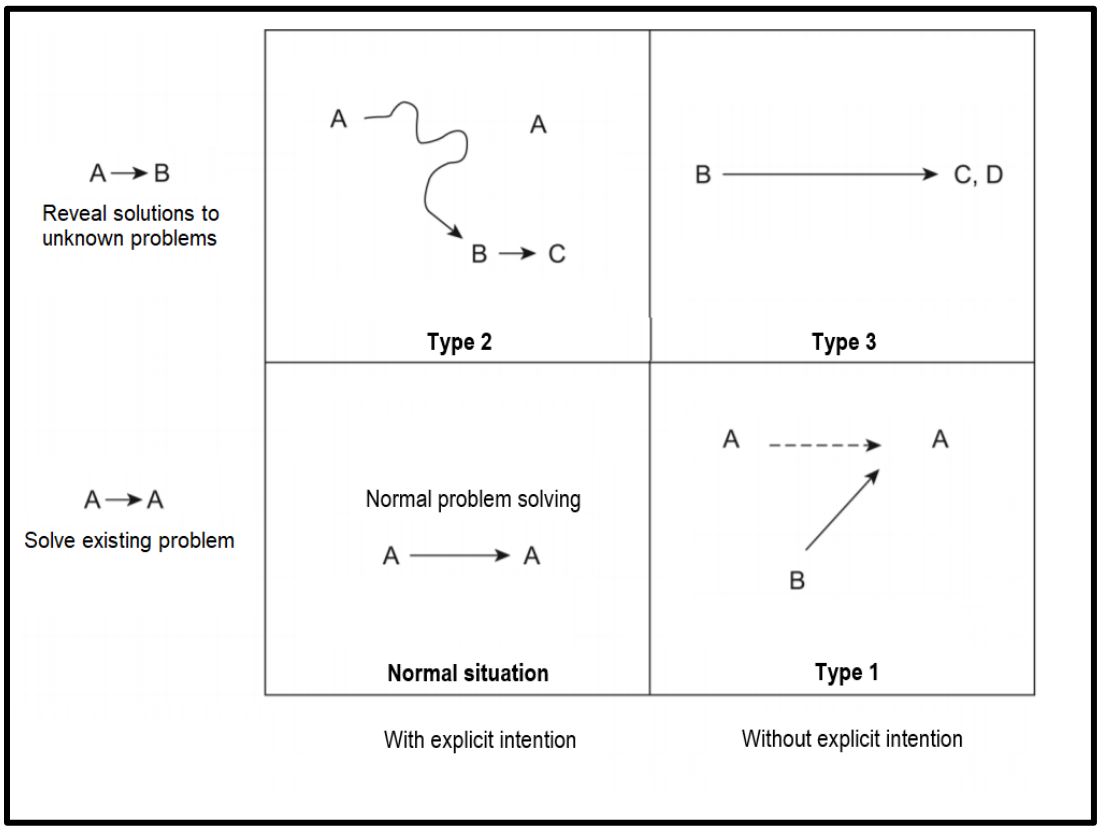

Figure 3: High value solutions associated with serendipity. Modified from Napier and Vuong (2013) and De Rond (2014).

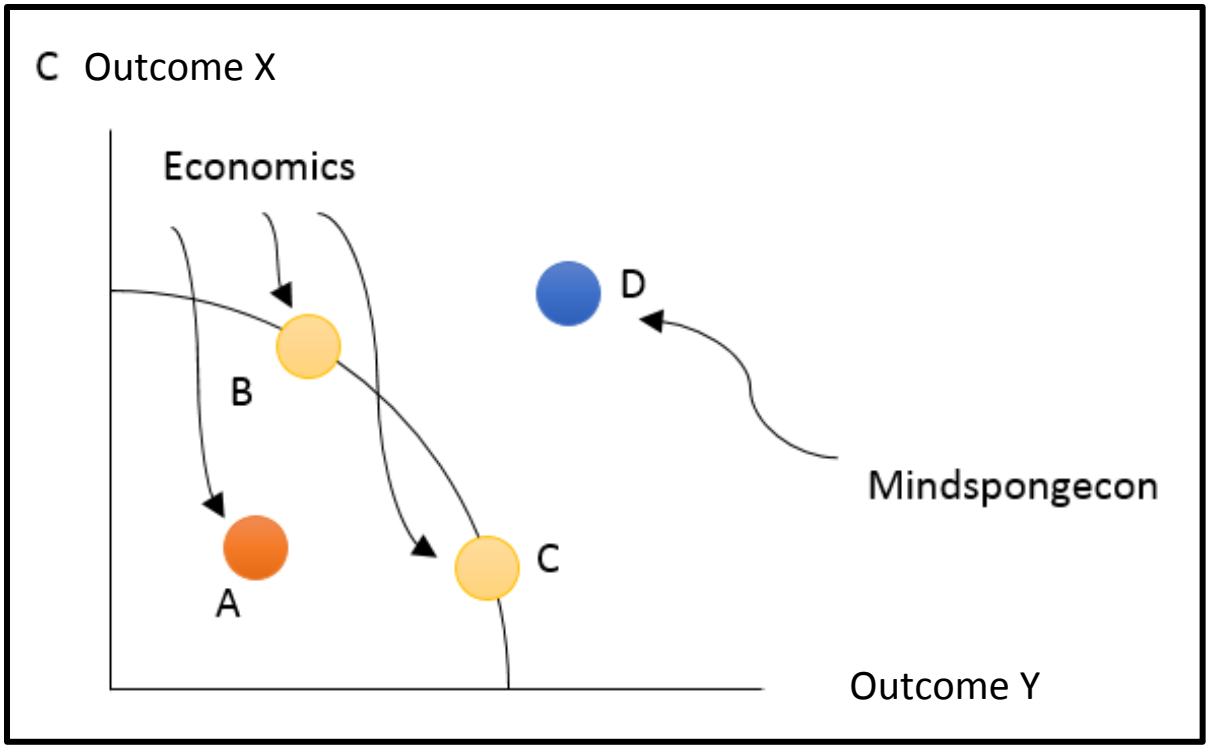

Figure 4: Production possibility frontier in current economics and mindspongecon. Source: Own elaboration

2.3. Mindspongecon helps human more connect nature, address GDP matter, contributing to reducing inequality and mitigating climate change, and building a desirable society for sustainable development

GDP (Gross domestic product) is one of the most important metrics in macroeconomics, but its use has been a controversial topic among many economists for many years. From my personal perspective, GDP has its own problem in economics. This is because GDP refers to total economic values of goods and services exchanged on the market, but environmental values [16], are almost not taken into account according to my best knowledge. As a result, the total economic value of goods and services are underestimated, leading to incorrect GDP as a whole. Mindspongecon can help deal with information as a resource using the complete information processing system based on its core value of environmental values. In the meantime, based on the limitation of GDP, of course, it is highly careful to use it to assess the wealth and/or quality of life while what we can do now is to advocate mindspongecon and/or mindspongenviron, a subfield of mindspongecon that deals with environmental problems only, to update the environmental values into GDP, which help people towards building a high value culture, eco-surplus culture. This is because as the environmental values are taken into account, the cost of goods and services are fully estimated, which affect the behaviors of consumers and produces. People are likely to reduce their utilization of resources. But it is not easy task because most of the economists may have very little knowledge

about nature. Hence, they should learn more from Nature to help tackle the environmental pollutions and climate change in the long run.

In summary, mindspongecon, a decision- making theory of applied economics, study how are people's choices made using information- processing mechanism with core values at the center. These values are dynamic and change over time, depending on the think-absorb-eject capacity. In years to come, mindspongecon will continue to evolve.

2.4. Updating mindspongeconomics' applications

As presented in prior sections, mindspongeconomics is a special extension and merger of the mindsponge theory and various disciplines so it can offer many contributions/applications (Box 1). Many scholars have employed mindspongeconomics to support their works recently, ranging from the topics of energy transition and urban development to agriculture development, healthcare, public health to environmental governance, environmental economics, sustainability, land management and conservation (see Table A1).

Box 1. Summary of Mindspongecon's new contributions/applications

- Identify factors/variables that can influence actors' decision/choice
- Justify the actors' high-value solutions/decisions-making using both rational and irrational thinking
- Predict the likelihood of actors' possible decisions/choices associated with time scales
- Address/correct many contemporary economics' issues such as optimization, GDP, etc.
- Help build a desirable society based on high-value culture for the sustainable development

Appendix

Table A1. Lists of key scientific articles using mindspongeconomics in 2022 - present

No	Article title	Journal	Study Area	Study Type	Method	N	Analysis Unit	Applications	Sources
19	Digitalization Drives the Green Transformation of Agriculture-Related Enterprises: A Case Study of A-Share Agriculture-Related Listed Companies	Agriculture	China	Empirical research	FE models	1049	Companies/ Enterprises	See Section 6.3. Research Limitations and Future Perspectives	Yuan and Guo (2024)
18	Closing nature connectedness to foster environmental culture: investigating urban residents' utilization and contribution to parks in Vietnam	Discover Sustainability	Vietnam	Empirical research	CBMM	535	Urban Residents	See Section 4.1 Bayesian mindsponge mindspongecono mics (BMM); Section 6. Discussions	Khuc et al.(2024)
17	Improving Green Literacy and Environmental Culture Associated with Youth Participation in the Circular Economy: A Case Study of Vietnam	Urban Science	Vietnam	Empirical research	BMM	485	Young people/Student s	See Section 3.2. Study Approach, Section 4. Materials and Methods);Section 6. Discussion; Section 7. Conclusions	Tran et al.(2024)
16	The Impact of the Cost of Travel Time and Feedback Type on Green Travel	Behavioral Sciences	China	Empirical research	Experimen ts, ANOVA	106	Young people/Student s	See Section 4. General Discussion	Zhong et al.(2024)
15	Improving Energy Literacy to Facilitate Energy Transition and	Urban Science	Vietnam	Empirical research	BMF	1454	Young people/Student s	See Section 5. Discussion	Khuc et al., (2023b)

	Nurture Environmental Culture in Vietnam								
14	Culture Tower	SSRN	-	Theorectical research	-	-	-	See Section 3. Culture tower (CT)'s attributes/features	Khuc (2023)
13	Using Contingent Valuation Method to Explore the Households' Participation and Willingness to Pay for Improved Plastic Waste Management in North Vietnam	Conference proceedings	Vietnam	Empirical research	CVM	525	Households	See Section 5. Discussions	Nguyen et al. (2023)
12	Does Education Influence Life-Course Depression in Middle-Aged and Elderly in China? Evidence from the China Health and Retirement Longitudinal Study (CHARLS)	International Journal of Environmental Research and Public Health	China	Empirical research	Linear Regression model	15767	Middle- aged and elderly individuals	See Section 4. Discussion	Xu et al. (2023)
11	Can water pollution control influence employment adjustment in enterprises?	Economic Analysis and Policy	China	Empirical research	FE DID model		Enterprises	See Section 5. Conclusions and policy suggestions	Yao et al.(2023)
10	Household - Level Strategies to Tackle Plastic Waste Pollution in a Transitional Country	Urban Science	Vietnam	Empirical research	Bayesian analysis; BMF	730	Households	See Section 6. Discussions	Khuc et al. (2023a)
9	How Does Foreign Direct Investment Drive Employment	Economies	Vietnam	Empirical research	Instrumental variable 2SLS	63	Cities/Provinces	See Section 1. Introduction; Section 4. Results	Dao et al. (2023)

	Growth in Vietnam's Formal Economy?				fixed-effect model			and Discussion; Section; Section 5. Further Analysis	
8	Study of Farmers' Willingness to Participate in Environmental Governance Based on Recycling, Reduction and Resourcing	Sustainability	China	Empirical research	Logistic regression models	529	Farmers	5. Conclusions and Discussion	Liu et al. (2023)
7	The Road to Eco-Excellence: How Does Eco-Friendly Deliberate Practice Foster Eco-Innovation Performance through Creative Self-Efficacy and Perceived Eco-Innovation Importance	Sustainability	Pakistan	Empirical research	PLS SEM	367	Service employees	See Section 8. Limitations and Future Directions	Miao et al. (2023)
6	Intention to Purchase Eco-Friendly Handcrafted Fashion Products for Gifting and Personal Use: A Comparison of National and Foreign Consumers	Behavioral Sciences	Indonesian and non-Indonesian consumers	Empirical research	PLS SEM	289	Consumers	See Section 5. Discussion	Saepudin et al. (2023)
5	Efficacy of Public Extension and Advisory Services for Sustainable Rice Production	Agriculture	Pakistan	Empirical research	Statistical Tests	193	Farmers	See Section 4. Discussion and Implications	Alzahrani et al. (2023)
4	The Impact of Openness on Human Capital : A Study of Countries by the Level of Development	Economies	Vietnam	Empirical research	Instrumental variable 2SLS fixed-	112	Countries	See Section 5. Conclusions and Policy Implications	Dao and Khuc (2023)

					effect model				
3	Factors Influencing Public Willingness to Reuse the Unused Stored Medications in Jordan: A Cross-Sectional Study	Healthcare	Jordan	Empirical research	Logistic regression model	681	Residents	See Section 4. Discussion	Alhamad et al. (2023)
2	An Agricultural Career through the Lens of Young People	Sustainability	-	Literature review	PRISMA		Young people	See Section 4. Discussion	Consentino et al.(2023)
1	Determinants of Farmers' Behavior towards Land Conservation	Land	Indonesia	Empirical research	Double-hurdle models	499	Farmers	See Section 2.1. Theoretical Framework	Susilowati et al.(2022)

References

1. Khuc, Q. V. Optimization Matter. **2022**, doi:10.31219/osf.io/xvzkj.
2. Khuc, Q. V. GDP. **2022**, doi:10.31219/osf.io/pqzs7.
3. Bizikova, L.; Smith, R.; Zoundi, Z. Measuring the Wealth of Nations : A Review. **2021**.
4. UCL Time for an Economics Reformation! Available online:

   https://www.rethinkeconomics.org/journal/time-economics-reformation/.
5. Tessa Koumoundouros To Save Ourselves It's Time to Rethink Our Economic System, Warn Scientists.
6. Vuong, Q.-H. *Mindsponge Theory*; Sciendo. https://sciendo.com/book/9788367405157: Warsaw, Poland, 2023; ISBN 978-83-67405-15-7.
7. Vuong, Q.H.; Napier, N.K. Acculturation and Global Mindsponge: An Emerging Market Perspective. *Int. J. Intercult. Relations* **2015**, *49*, 354–367, doi:10.1016/j.ijintrel.2015.06.003.
8. Sendhil Mullainathan; Thaler, R.H. *Behavioral Economics. Working Paper 7948*; 2000;
9. Loewenstein, G.; Rick, S.; Cohen, J.D. Neuroeconomics. *Annu. Rev. Psychol.* **2008**, *59*, 647–672, doi:10.1146/annurev.psych.59.103006.093710.
10. Just, R.; Hueth, D.L.; Andrew, S. *Applied Welfare Economics*; Edward Elgar Publishing, 2008;
11. Davis, D.D.; Holt, C.A. *Experimental Economics*; Princeton University Press, 1957;
12. Vuong, Q.H.; Napier, N.K. Making Creativity: The Value of Multiple Filters in the Innovation Process. *Int. J. Transitions Innov. Syst.* **2014**, *3*, doi:10.1504/IJTIS.2014.068306.
13. Quan-Hoang Vuong; Le, T.-T.; Khuc, Q.; Nguyen, M.-H. A New Theory of Serendipity. In: QH Vuong. (Ed.) A New Theory of Serendipity: Nature, Emergence and Mechanism(Pp. 91-108). Berlin, Germany: De Gruyter. In; 2022.
14. Vuong, Q.-H. *A New Theory of Serendipity: Nature, Emergence and Mechanism*; Sciendo, 2022;
15. Vuong, Q. H., et al. Covid-19 Vaccines Production and Societal Immunization under the Serendipity-Mindsponge-3D Knowledge Management Theory and Conceptual Framework. Humanities and Social Sciences Communications, 9, Forthcoming. **2022**.
16. Vuong, Q.H. The Semiconducting Principle of Monetary and Environmental Values Exchange. *Econ. Bus. Lett.* **2021**, *10*, 284–290, doi:10.17811/EBL.10.3.2021.284-290.

17. Yuan, Y.; Guo, X. Digitalization Drives the Green Transformation of Agriculture-Related Enterprises : A Case Study of A-Share Agriculture-Related Listed Companies. *Agric.* **2024**, *14*, doi:10.3390/agriculture14081308.
18. Khuc, V.Q.; Tran, M.; Thinh, N.A.; Lich, H.K.; Dang, T.; Nguyen, T.M.H.; Tran, D.T. Closing Nature Connectedness to Foster Environmental Culture: Investigating Urban Residents' Utilization and Contribution to Parks in Vietnam. *Discov. Sustain.* **2024**, *5*, 144, doi:10.1007/s43621-024-00350-y.
19. Tran, P.M.; Nguyen, T.; Nguyen, H.-D.; Thinh, N.A.; Lam, N.D.; Huyen, N.T.; Khuc, V.Q. Improving Green Literacy and Environmental Culture Associated with Youth Participation in the Circular Economy : A Case Study of Vietnam. *Urban Sci.* **2024**, *8*, 63, doi:https://doi.org/10.3390/urbansci8020063.
20. Zhong, B.; Tan, M.; Zhong, W.; Fan, W. The Impact of the Cost of Travel Time and Feedback Type on Green Travel. *Behav. Sci. (Basel).* **2024**, doi:10.3390/bs14070588.
21. Khuc, Q. Van; Tran, M.; Nguyen, T.; Thinh, N.A.; Dang, T.; Tuyen, D.T.; Pham, P.; Dat, L.Q. Improving Energy Literacy to Facilitate Energy Transition and Nurture Environmental Culture in Vietnam. *Urban Sci. 2023, Vol. 7, Page 13* **2023**, *7*, 13, doi:10.3390/urbansci7010013.
22. Khuc, V.Q. Culture Tower. *SSRN* **2023**, doi:10.2139/ssrn.4559667.
23. Nguyen, A.T.; Tran, M.; Nguyen, T.; Khuc, Q. Using Contingent Valuation Method to Explore the Households' Participation and Willingness to Pay for Improved Plastic Waste Management in North Vietnam BT - Contemporary Economic Issues in Asian Countries: Proceeding of CEIAC 2022, Volume 2.; Nguyen, A.T., Pham, T.T., Song, J., Lin, Y.-L., Dong, M.C., Eds.; Springer Nature Singapore: Singapore, 2023; pp. 219–237.
24. Xu, X.; Zhou, Y.; Su, D.; Dang, Y.; Zhang, X. Does Education Influence Life-Course Depression in Middle-Aged and Elderly in China? Evidence from the China Health and Retirement Longitudinal Study (CHARLS). *Int. J. Environ. Res. Public Health* **2023**, *20*, doi:10.3390/ijerph20021256.
25. Yao, P.; Wang, Y.; Liu, J. Can Water Pollution Control Influence Employment Adjustment in Enterprises? *Econ. Anal. Policy* **2023**, doi:10.1016/j.eap.2023.08.018.
26. Khuc, Q. Van; Dang, T.; Tran, M.; Nguyen, D.T.; Nguyen, T.; Pham, P.; Tran, T. Household - Level Strategies to Tackle Plastic Waste Pollution in a Transitional Country. *Urban Sci.* **2023**, *7*, doi:10.3390/urbansci7010020.
27. Dao, T.B.T.; Khuc, V.Q.; Dong, M.C.; Cao, T.L. How Does Foreign Direct Investment Drive Employment Growth in Vietnam's Formal Economy? *Economies* **2023**, *11*, doi:10.3390/economies11110266.
28. Liu, J.; Huang, S.; Wang, Y. Study of Farmers' Willingness to Participate in Environmental Governance Based on Recycling, Reduction and Resourcing.

Sustain. **2023**, *15*, 1–18, doi:10.3390/su151410850.

29. Miao, Y.; Iqbal, S.; Ayub, A. The Road to Eco-Excellence: How Does Eco-Friendly Deliberate Practice Foster Eco-Innovation Performance through Creative Self-Efficacy and Perceived Eco-Innovation Importance. *Sustain.* **2023**, *15*, doi:10.3390/su15043481.
30. Saepudin, D.; Shojaei, A.S.; Barbosa, B.; Pedrosa, I. Intention to Purchase Eco-Friendly Handcrafted Fashion Products for Gifting and Personal Use: A Comparison of National and Foreign Consumers. *Behav. Sci. (Basel).* **2023**, *13*, doi:10.3390/bs13020171.
31. Alzahrani, K.; Ali, M.; Azeem, M.I.; Alotaibi, B.A. Efficacy of Public Extension and Advisory Services for Sustainable Rice Production. *Agric.* **2023**, *13*, doi:10.3390/agriculture13051062.
32. Dao, T.B.T.; Khuc, V.Q. The Impact of Openness on Human Capital : A Study of Countries by the Level of Development. *Economies* **2023**, *11,175*, doi:10.3390/economies11070175.
33. Alhamad, H.; Jaber, D.; Abu-Farha, R.; Albahar, F.; Edaily, S.M.; Donyai, P. Factors Influencing Public Willingness to Reuse the Unused Stored Medications in Jordan: A Cross-Sectional Study. *Healthc.* **2023**, *11*, 1–15, doi:10.3390/healthcare11010075.
34. Consentino, F.; Vindigni, G.; Spina, D.; Monaco, C.; Peri, I. An Agricultural Career through the Lens of Young People. *Sustain.* **2023**, *15*, doi:10.3390/su151411148.
35. Susilowati, S.H.; Sumaryanto, I.; Nurfatriani, F.; Tarigan, H. Determinants of Farmers ' Behavior towards Land Conservation. *Land* **2022**, 1–21, doi:10.3390/land11101827.

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