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Health Belief and Behaviour: An Analysis of the Predictors for Receiving COVID-19 Vaccines in Malaysia

Dr Liew's research interests are in corporate governance, corporate finance, green and sustainable finance, information economics & management, market microstructure, applied finance & economics as well as interdisciplinary business research. He is also sought after by the local mass media for comments such as from the Star newspaper, New Straits Times, BFM89.9 radio, Radio Television Malaysia, TV3, etc. His research have been published in Journal of Finance, Global Finance Journal, Economic Change and Restructuring, Journal of Family Business Management, Journal of Developing Areas, Asian Academy of Management Journal, Journal of Industrial & Business Economics, Managerial Finance, Young Consumers, Spanish Journal of Economics & Finance, International Journal of Economics & Finance Studies, Asian Journal of Business Research, International Journal of Organizational Leadership, etc.



*Assistant Professor Dr Liew
Chee Yong*

Introduction

In December 2019, the first coronavirus disease 2019 (COVID-19) case appeared in Wuhan, China. Since then, it has spread worldwide, resulting in more than 6.38 million deaths (as of 27 July 2022) in 194 countries around the world which are member states of the World Health Organization (WHO, 2022a). As of December 2020, over 200 types of vaccines have been developed around the world to prevent infection of this virus (WHO, 2021). Only eleven of these 200 vaccines have been authorised by the World Health Organization (WHO).

These vaccines are AstraZeneca with Oxford University, United Kingdom, BioNTech with Pfizer, USA, Gamaleya from Russia, Moderna from USA, Sinopharm with Beijing Institute, China, Covavax from Serum Institute of India, India, Novavax from USA, CanSino from China, Janssen from Johnson & Johnson, USA, Covishield from Serum Institute of India, India, Covaxin from Bharat Biotech, India and Sinovac Coronavac from China (WHO, 2022b). Although many vaccines are being developed,

It is also important to ensure massive vaccination in society to generate herd immunity, which is the ultimate target to achieve in preventing the infection of this virus (Mercadante and Law, 2020; Paul et al., 2021). Awareness about people's vaccination intentions and the factors that either support or discourage vaccination is crucial for achieving widespread immunisation.

Based on this understanding, necessary steps can be taken by the relevant authorities in the country to increase vaccination uptake, such as improving public health communication by organising effective public health campaigns, etc. (Paul et al., 2021; Ruiz and Bell, 2021). Knowing the predictors of people's IRV vaccines is essential. The purpose of this research is to identify the predictors of the 'Intention to Receive COVID-19 Vaccines' (IRV). Various studies have been conducted to investigate these predictors. Other similar research includes Cerda and Garcia (2021), Coulaud et al. (2022), Detoc et al. (2020), Eberhardt and Ling (2021), Hao and Shao (2022), Honora et al. (2022), Jacoby et al. (2022), Kitro et al. (2021), Kwok et al. (2021), Leng et al. (2021), Liao et al. (2022), Mercadante and Law (2020), Paul et al. (2021), Paul and Fancourt (2022), Ruiz and Bell (2021), Seddig et al. (2022), Tan et al. (2022), Urrunaga-Pastor et al. (2021), Wang et al. (2020) and Wong et al. (2021).

Given that elderly people are the vulnerable ones and we should look across different educational levels, this research will not control the selection of samples and moderating effects because we are more concerned with understanding IRV in time with the introduction of different types of vaccines.

This study is amongst the first to investigate whether information incorporating herding behaviour influences people to perceive institutional quality as one of the predictors of IRV. To the best of our knowledge, no other studies have conducted such research by taking herding and institutional quality into consideration of building a model of vaccination behaviour.

The research is conducted based upon three perspectives, i.e., the health belief model (HBM), behavioural economics (herding, accessibility, etc.), and institutional quality.

Research Methodology

This research employed a quantitative survey using Google form to collect responses from people worldwide. Due to the urgency and unique situation of the COVID-19 outbreak, we have employed convenience sampling and snowball sampling methods to collect responses during the pandemic.

These non-probability sampling methods are deemed suitable, especially during the pandemic. The researchers sent out the questionnaire to respondents through emails, social media platforms such as Facebook, LinkedIn, and researchers' contacts. The data collection started from 1 December 2020 to 15 January 2021.

The questionnaire consists of three sections, and it took approximately 15 minutes for each respondent to complete the survey. The first section contains questions related to the background of respondents such as gender, age, marital status, number of children, employment, education level, ethics, area and country of residence, and the likelihood of taking a vaccine against COVID-19 infection when it is available in the market, etc.

The second section asked the respondents to provide feedback regarding their decision making in receiving COVID-19 vaccines.

The third section focuses on the influence of institutional quality on receiving COVID-19 vaccination.

The data were coded upon the completion of data collection, and several quantitative analysis techniques were used to compute the results. Exploratory factor analysis and reliability tests were used to categorise the variables into latent behavioural factors. Cronbach's alpha test for internal consistency was conducted to examine the inter-correlation of variables within each factor.

Hence, this paper presented the results using exploratory factor analysis, reliability, paired sample t-tests, and multiple linear regression analysis. Besides SPSS Statistics, this paper also utilised Microsoft Excel to complete the data analysis and present the results.

Conclusion

This study is one of those few cross-country studies investigating the predictors of IRV as well as the first to investigate how one of these predictors, i.e. the institutional quality and herding, influence IRV. Based upon multiple regression analyses, this study found five significant predictors of IRV: Perceived Benefits, Perceived Barriers, Perceived Susceptibility, Herding, and Institutional Quality.

The results reveal that the respondents behaved differently before and after they were provided information incorporating the impact of herding. Before they were provided with the information, Perceived Benefits, Perceived Barriers, Herding, and Perceived Susceptibility were the predictors of IRV. After they were provided such information, Perceived Benefits, Perceived Barriers, and Institutional Quality became the significant predictors.

This research shows that once people possess the herding mentality after being exposed to information encouraging such behaviour, their focus shifts to institutional quality as one factor influencing their IRV. This reflects that the effectiveness of government authorities, regulatory quality, the rule of law, and control of corruption are also significant predictors of IRV but only within a herding mentality.

Full text of this article is available at the following :

Tan, C., & Liew, C. Y. (2022). *Health belief and behaviour: an analysis of the predictors for receiving COVID-19 vaccines in Malaysia*. Public Administration and Policy, ahead-of-print(ahead-of-print). doi:10.1108/PAP-02-2022-0015

Case Study

“We Share the Same Moon”

Assistant Professor Dr Perline Siek's research interests are visual communication and cultural design studies, she presented her creative outputs in national and international exhibitions and published research articles in journals and international conferences.

As a design researcher:

In Mid of 2022, Dr Siek wrote a grant proposal to the Ministry of Tourism, Art, and Culture (MOTAC) to carry out a national cultural design project; she was awarded the national grant on 2 August 2022.

The concept of her “We Share the Same Moon” was as follows:

All of us in this world share the same moon. We share the same feelings towards our home regardless of where it may be. We see the different phases of the same moon in the night sky, just like we always experience a mixture of good and bad moments in our lives.

The pandemic has disabled many of us from getting in touch with each other. However, arts connect souls. The project 'We Share the Same Moon' has gathered 365 local artists from every state of Malaysia in creating an innovative and meaningful calendar. They contributed works that can portray the beauty of their homeland - Malaysia. Each work is intertwined with different phases of the moon and placed on each day of the calendar to remind all of us that with arts, we can still connect with each other every day despite we are apart.

As a graphic designer:

Dr Siek recalled that she did a pitch presentation in mid of 2022 to showcase the concept, and to explain the creative choices, she managed to convince the judges of her creativity in carrying out this project.

She demonstrated her professionalism, instill confidence, and lays the foundation for this ‘We Share the Same Moon’, right from gathering a total of 365 Malaysian painting artists from every corner of Malaysia, design directing of the calendar, packaging, communication, planning, and networking among a few hundred artists.

As she said designers are often under tight deadlines, but she has the confidence that she can get it done within the given period of three months, from August to October 2022.



Assistant Professor Dr Perline Siek

The design and layout of the calendar include the following specs which she presented:

- Users can support talented local artists by connecting with them by email which is printed at the back of the page or by commissioning their original works.
- With a total of 64 postcards, user can send their warm regards to their loved ones through the postcards no matter where they are staying (see figure 1, a day with postcard design).
- A total of 153 days is designed with origami instruction of Malaysians' flowers, insects, and animals, which enable the user to spend their precious parent-child time (see figure 2, a day with origami design).
- A total of 144 days with authentic local food recipes from Malaysian (see figure 3, a day with recipe design).
- The calendar is presented in a sustainable material box, such as a corrugated box with a sleeve. The box itself can be converted into a tabletop display which can hold a stack of name cards and two pen-holding functions (see figure 4).



Figure 1. 2nd April 2023 by artist, Oironson, Postcard



Figure 2. 1st Jan 2023 by artist, Cholan. Origami



Figure 3. 25th July 2023 by artist, Foo Chee Hui, food recipe

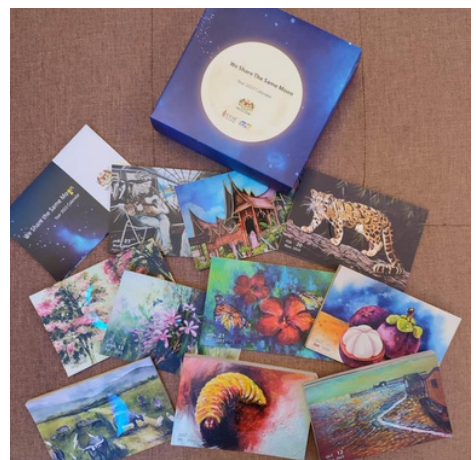


Figure 4. Calendar Box and contents

As a painting artist:

The exhibition was successfully held at UCSI University, from 27 to 31 October 2022 (see figure 5).

The opening ceremony was launched by Tuan Haji Tuan Haji Mesran bin Mohd Yusop, the general director general of the national for Culture, Vice-Chancellor of UCSI University, YBhg. Professor Datuk Ir Ts Dr Siti Hamisah Binti Tapsir (see figure 6), 17 art associations, art societies (see figure 7), and almost 200 artists.

Setting up an art exhibition is a complex process, factors such as venue, size, lighting, accessibility, security, and making sure artworks are in good condition and properly framed and displayed. Including providing a clear and concise label for each artwork, including the artist's name, title, date, medium, and price, making sure that signage is visible and informative, and planning an opening ceremony to attract visitors and create a buzz around the exhibition.

Dr Siek successfully carried out all the above-mentioned activities for the event.

As an art ambassador for this project, she created a promotional strategy to call for local artists on social media and visited several exhibitions to invite artists to support this project.

The first time in the nation gathered all art associations under one roof to interact with one another and this *event attracted the national TV station (TV2) to come to interview artists* (see figure 8 and 9).

The programme was featured on air on the 22 (part 1) and 23 Dec (part 2) (see the following hyperlinks).

- Part 1:
<https://www.facebook.com/galerimandari ntv2/videos/570357888246147>
- Part 2:
<https://www.facebook.com/galerimandari ntv2/videos/5744288715679043>



Figure 5. Exhibition



Figure 6. The Opening ceremony



Figure 7. art associations presented

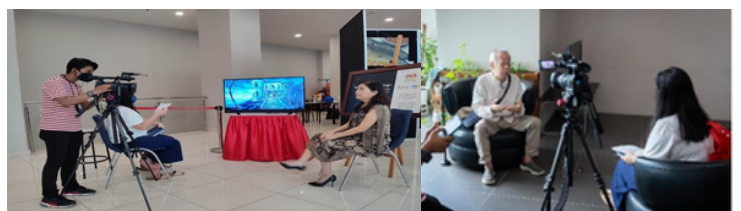


Figure 8 and 9. Dr Perline Siek and artist, Chin Kon Yit were interviewed by a TV2 reporter

Academic Research Award: A Look at the Benefits

Dr Liew Siew Ling currently serves as the Head of Research and Postgraduate Studies at the Faculty of Business and Management. Her research interest is in Economics. Besides teaching, she is also a Board member of the Centre for Responsible Borneo and a reviewer for the Borneo Journal of Social Science and Humanities.

Ms Francesca Enchang, is the Head of Praxis, Industry And Community Engagement at the Faculty of Business and Management. She is currently pursuing her studies in Doctor in Business Administration, focusing in area of Marketing & Management. She is also the Technical Advisory Committee for Business Programme for Kolej Vokasional Kuching, Sarawak since 2017. Besides being as an academician, she is the Chairperson for the Sarawak River Art Competition since 2019, one of the community projects under Regional Centre of Expertise Kuching (RCE Kuching).

The research award is a prestigious award given to researchers who demonstrate excellence in their field. It is given to the lecturers on a yearly basis in recognition of excellence in research. Research awards are an important part of the university system, as it is a method for the lecturers to be recognized and rewarded for their research efforts. The research award is needed to enhance the research outputs of academicians (Lim, 2021) and to foster innovation in the university as well as the wider national and international community. our paragraph text



Dr Liew Siew Ling



Ms Francesca Enchang

Providing research awards to outstanding educators can be beneficial in many ways. It can have a significant impact on the research in terms of the quality produced by academicians. The main advantage of research awards is that it can incentivize academicians to produce higher-quality research. This can be achieved through the recognition that comes with winning a research award. By being rewarded for their research, academicians are likely to be more motivated to produce the best quality research possible. This is especially true as research awards act as a morale booster to the young researchers.

In addition, research awards can help to foster collaboration with various like-minded researchers and institutes from various industries. By having opportunities for collaboration, research awards can encourage academicians to work together and simultaneously learn and improve the quality of their research work. This is particularly important in many fields such as social science, and sciences and mathematics, where often time, collaboration is necessary in order to produce breakthroughs. Overall, research awards are an important part of the university system as it helps to improve the quality of research that is of produced the by university academicians. At the same time, quality research generally helps to enriched teaching activities (Lakhotia, 2021; Prince, Felder & Brent, 2007).

The impact of research awards on the university and industry players is significant. Such awards can help to facilitate the transfer of knowledge and technology, and commercial products from the university to the industry, as well as provide an impetus to the research activity of faculty members. In this sense, they can be seen as a source of motivation and inspiration for researchers.

Research awards also act as a stimulus by ensuring that researchers are held accountable for their research work and are able to access funding resources necessary for conducting high-quality research. Furthermore, it improves in terms of providing opportunities for academicians to collaborate with industry partners in order to develop new research projects such as engaging in consultancy projects and grants. Besides, research awards help to improve the visibility of a researcher's work and build a reputation in the academic and industrial circle. As such, the productivity of research is an important indicator of the success of academicians which on the other hand would influence their career advancement (Chen, 2015; Suhardi, Fuad, and Rosyidi, 2018; Lim, 2021).

Additionally, the research award helps to add value to the brand of the university which has had a profound effect on industry players who are investing more in research and development.

For example, on 28 November 2022, the Faculty of Business and Management and Centre of Pre-University Studies of the UCSI University (Sarawak Campus), one of the Malaysia's top private universities celebrated their annual Award Ceremony 2022 at UCSI Hotel Kuching. The event was officiated by the campus Pro Vice-Chancellor, Mdm. Mukvinder Kaur Sandhu.

In her speech, she highlighted that the achievements of students and staff will inspire others to embark on a journey to continue to pursue their best. Their achievements and the university's commitment to providing academic excellence has earned UCSI University the nation's best private university status in the QS World University rankings 2023. As for the lecturers, the awards included the Innovative Educator, Outstanding Educator, Teaching Excellence Award, Innovative Educator and Certificates of Merit to Young Researchers. With such award, it helps in encouraging new entrants to the market as they see the potential benefits of investing in research and development themselves.

In light of this, it is clear that research awards for academicians have a significant impact on the quality of research undertaken at universities around the world.

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Fundamental Research Grant Scheme (FRGS) 2022: Green Synthesis of Zinc Oxide Loaded Vinblastine Nanoparticles and their Anticancer Potential on Specific Cancer Cell Lines

According to GLOBOCAN 2020 an estimated 19.3 million new cancer and almost 10.0 million cancer deaths occurred worldwide in 2020. In Malaysia, thirty thousand people have died due to cancer in 2020 and it has also been identified as the fourth leading cause of death in the country, the death toll is expected to double by 2040.

Chemotherapy drugs are most effective at killing cells that are rapidly dividing. Unfortunately, chemotherapy drugs generally are not able to differentiate between the cancerous cells and the normal cells. In addition, chemotherapy is associated with certain limitations, such as existing systemic toxicity, unsatisfying response rate, unpredictable innate, acquired resistance, and low tumor-specific selectivity.

The use of nanoparticles (NPs) in targeted medication delivery has been a promising area of study for cancer therapy. Among the available NPs, ZnO NPs showed cancer cell specific toxicity via generation of reactive oxygen species and destruction of mitochondrial membrane potential, which leads to the activation of caspase cascades followed by apoptosis of cancerous cells. ZnONPs were found to be capable of targeting multiple cancer cell types, but not the healthy cells, as well as inhibiting cancer cell proliferation, sensitizing drug-resistant cancer, preventing cancer recurrence, metastasis, and reviving cancer immune surveillance. Furthermore, the integration of natural ingredients such as vinblastine, a natural alkaloid isolated from the plant *Vinca rosea* Linn which was proven to have enhanced anticancer properties and used as chemotherapeutic agent.

The objectives of the this research project are to synthesize and characterize vinblastine loaded ZnONPs (VBZnONPs) and to compare the anti-cancer activity on MCF -7 (breast cancer), SiHa (cervical cancer), and CACO2, (colon cancer) cell lines against vinblastine. Green synthesized ZnONPs are highly water-soluble, biocompatible, cost-effective, and environmentally friendly. The research team believes that this approach will contribute to attain SDG goals, national MySTIE 10-10 policy to support the implementation of DSTIN 2021-2030.



Assistant Professor Dr Ashok Kumar
Janakiraman



No.	Funding Scheme	Submission Closing Date
1	Prototype Development Research Grant Scheme (PRGS)	2 Apr 2023
2	Geran Collaborative Research Programme (CRP) – ICGEB Research Grants dan CRP-ICGEB Early Career Return Grants https://www.icgeb.org/activities/grants/	30 Apr 2023
3	Yayasan Penyelidikan Otak, Minda dan Neurosains Malaysia https://www.ypomnm.org/	30 Apr 2023
4	International Centre for Genetic Engineering and Biotechnology (ICGEB) Research Grant 2023: Collaborative Research Programme (CRP) https://www.icgeb.org/activities/grants/	30 Apr 2023
5	The Merdeka Award https://www.merdekaaward.my/the-grant/faqs	1 May 2023
6	Research Excellence and Innovation Grant (REIG) Cycle 1/2023	15 May 2023
7	Malaysia Toray Science Foundation (MTSF) https://www.mtsf.org/	31 May 2023
8	MAKNA Cancer Research Award https://www.mytopscientists.org/v3/	31 Mar 2023
9	National Conservation Trust Fund for Natural Resources (NCTF) https://www.ketsa.gov.my/en-my/KetsaCore/Biodiversity/Pages/nctf.aspx	Open throughout the year
10	Global Funding for Rubber innovation https://www.myrubbercouncil.com/globalrubberfund/index.php	Open throughout the year
11	National Conservation Trust Fund (NCTF) https://www.ketsa.gov.my/en-my/KetsaCore/Biodiversity/Pages/nctf.aspx	Open throughout the year
Exhibition(s)		
1	International Invention, Innovation & Technology Exhibition (ITEX 2022) URL link: https://itex.com.my/	
Symposium(s)		
1	The 6th World Conference on Marine Biodiversity URL link: http://www.ictmid.com/	
Webinar(s)		
1	Webinar 60 Minit Bersama RMU Siri 3 Tahun 2022/ 2023 entitled "Dana Penyelidikan Kementerian Pendidikan Tinggi" URL link: https://meet.google.com/jtv-fjpv-rfa	
Awards		
1	Prof. Yoo Hang Kim Young Women Scientists Awards URL link: https://www.bas.org.bd/index.php/news/details/73	

Please refer to your respective Head of Research for more information.

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