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GREEN ENTREPRENEURIAL ORIENTATION AND CORPORATE ENVIRONMENTAL

PERFORMANCE: A SYSTEMATIC LITERATURE REVIEW Assistant Professor Dr Naveed R. Khan

Assistant Professor Naveed R. Khan, Ph.D., is from the Department of Management, Faculty of Business and Management.

Green entrepreneurial orientation (GEO) is gaining attention as a solution to improve corporate environmental performance problems.

Corporate environmental performance (CEP) refers to the impact that business activities have on the environment and demonstrates a firm's commitment to eco-friendly actions. Green entrepreneurial orientation refers to an organisation's willingness and readiness to undertake innovative and proactive actions for the betterment of the company and the environment. Environmental entrepreneurship is a mechanism that focuses on identifying and transforming opportunities linked to sustainable development while considering costs, risks, and uncertainty. There is a need for more research on GEO because while there is plenty of research on environmental entrepreneurship, there are only a few studies that focus explicitly on GEO, which is important for implementing environmental entrepreneurship within a business. Limited information is available on how GEO is created and implemented in practise and on the conditions that may strengthen the GEO-CEP relationship.

A firm with a strong GEO is often characterised by its commitment to reducing its environmental impact, as well as its willingness to invest in new and emerging technologies that have the potential to improve the environment. This orientation can be seen as a competitive advantage, as it allows firms to tap into growing consumer demand for environmentally friendly products and services. Firms with GEO mechanism are likely to engage in CEP in a number of ways, including by examining the firm's carbon footprint, its use of renewable energy sources, and its compliance with environmental regulations. A firm with a high CEP is often seen as a responsible corporate citizen, as it is taking concrete steps to reduce its environmental impact and contribute to the wider goal of sustainability.



Assistant Professor Dr Naveed R. Khan

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The relationship between GEO and CEP is complex and multidimensional. On one hand, firms with a strong GEO are likely to have a high CEP, as they are more likely to invest in environmentally friendly technologies and processes. On the other hand, firms with high CEPs may also have a strong GEO, as they are more likely to be seen as responsible corporate citizens and attract environmentally conscious consumers.

One key factor that contributes to the relationship between GEO and CEP is the role of corporate culture. Firms with a strong proenvironmental culture are more likely to have a high GEO and CEP, as they are more likely to encourage employees to engage in environmentally friendly practices and support initiatives that promote sustainability.

In contrast, firms with a weak pro-environmental culture may have a lower GEO and CEP, as they are less likely to prioritize environmental concerns and may resist changes that would improve their environmental impact.

Another important factor is the presence of supportive regulatory and policy frameworks. Firms operating in regions with strong environmental regulations are more likely to have a high CEP, as they are required to adhere to strict environmental standards.

At the same time, firms in regions with supportive policy frameworks for green entrepreneurship are more likely to have a high GEO, as they are able to access resources and support that help them develop environmentally friendly products and services.

Managerial implications

The research contribution has implications for both practitioners and business school management in promoting socioeconomic development. It focuses on the importance of a firm's green entrepreneurial orientation for sustainable performance and suggests that managers benefit from analysing research trends and proactively identifying sustainable opportunities.

The research also highlights the need for business school management to better understand and effectively teach green entrepreneurship to students, including incorporating it into their programmes and curriculum and adapting their teaching methods. This could lead to more environmentally sustainable initiatives by future entrepreneurs.

Policy recommendations

The research suggests policy measures for promoting positive environmental outcomes. These measures include establishing a clear environmental framework for green activities, publishing statistics on waste, degradation, and pollution, implementing a mechanism for rewards and punishments, introducing a green rating system for businesses, providing R&D support and technological training, instituting subsidies and tax credits for green projects, and streamlining procedures for approvals and technology transfer. These measures aim to address financial and administrative barriers to green technology adoption.

Full text of the study is available at Ameer, F., Khan, N. R. (2022). Green entrepreneurial orientation and corporate environmental performance: A systematic literature review. European Management Journal, https://doi.org/10.1016/j.emj.2022.04.003. [Publisher: Elsevier; Country: UK; Abstracting and Indexing: Web of science – SSCI (Impact Factor:6.1); Scopus-Q1; ISSN: 0263-2373].



DO YOU KNOW YOUR SMARTPHONE CAN MAKE YOU A TOURIST?

Assistant Professor Dr Irfan Hameed

Assistant Professor Dr Irfan Hameed is currently serving UCSI University, Kuala Lumpur, Malaysia. Formerly, he worked as an Associate Professor of Marketing at the Institute of Business Management and Iqra University, Karachi, Pakistan. He worked in various administrative positions, including Registrar, Head of Graduate Studies, Chairperson of the Marketing Department, and Head of Research. His research areas include consumer behavior, social media marketing, and sustainable consumption. He published his scholarly work in reputed journals including the Social Responsibility Journal, the Journal of Hospitality and Tourism Insights, the Journal of Marketing for Higher Education, Human Behavior and Emerging Technologies, Environmental Science and Pollution Research, Environment, Development & Sustainability, Energy Efficiency, and the British Food Journal.

Introduction

Since the beginning of psychology and the social sciences, behavior modeling has been a significant subject. Regardless of a country's size or degree of development, the expansion of internet-driven disruptive digital and communication technologies has affected and continues to influence many fragments of society. The exponential rise in mobile phone use has affected travelers' behavior as well. They make purchases, exchange stories, and gather information over the phone. Similarly, most travel and hotel reservations are made on smartphones rather than other connected devices.

Despite the widespread use of mobile devices for booking and traveling, only a tiny percentage of individuals make online payments using mobile devices. Retailers now take 29% more online payments than they did in 2015, up from 24%. Even while smartphone adoption has matured in many developing nations, just 39% of people globally hold mobile wallets. Studies on the mobile payment system (MPS) focused on security concerns, awareness, trust, inconsistency issues, and lack of inclusive application alternatives. There is a dearth of research on how customers' ongoing intentions for mobile phone payment are connected to trip booking, particularly in developing nations.

Theoretical foundations

Hameed et al. (2022) examined customers' views on using MPS for travel purposes using the characteristics outlined in the Coping Theory as determinants. An updated Unified Theory of Acceptance and Use of Technology may help to close a gap in the literature by adopting its key predictors as antecedents to the intention to use MPS for travel booking.

An effort is also required to look into the reasons for the slow uptake of MPS. To comprehend why customers are reluctant to book trips via MPS, a number of obstacles from the Innovation Resistance Theory have been posited.



Assistant Professor Dr Irfan Hameed



Coping Theory

According to coping theory, users evaluate novel systems cognitively in three stages before acting out. It claims that opportunity appraisal, threat appraisal, and secondary appraisal make up the behavioral reaction to novel systems. We predict that perceived value, perceived threat, and perceived controllability will play significant roles in determining MPS deployment intention.

Unified Theory of Acceptance and Use of Technology

UTAUT was revised to UTAUT2 by adding three additional variables to the model (HM, price value, and habit) and restricting the number of moderators to three (age, gender, and experience). The UTAUT2 model, which takes the customer environment into account, has been used in a number of contexts including consumer payment and purchase behavior, such as contactless payments, mobile commerce, and mobile banking.

Innovation Resistance Theory

The Innovation Resistance Theory (IRT) may be used to explain customer behavior that is resistance-oriented. A person's life may experience resistance-oriented behavior as a consequence of the changes brought on by adopting innovations. Customer resistance determines whether new technology, information systems, or innovations succeed or fail.

Implications

There are a few managerial and policy implications of MPS adoption for travel purposes. The business must enhance its worth by increasing perceived value, which might be accomplished by focusing on the reliability, availability, and agility of mobile payment systems.

The customer expects reliability from MPS, both in terms of use and information security. China is one such example, with over 46% of the country's population using mobile to conduct financial transactions.

Surprisingly, "WeChat" accounts for nearly 85% of all transactions. Businesses in other countries may create such an app with government help for data security and reliability.

Further Study & Reference

Hameed, I., Mubarik, M. S., Khan, K., & Waris, I. (2022). Can Your Smartphone Make You a Tourist? Mine Does: Understanding the Consumer's Adoption Mechanism for Mobile Payment System. Human Behavior and Emerging Technologies, 4904686. https://doi.org/10.1155/2022/4904686.

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SYNCHRONIZATION OF FRACTIONAL STOCHASTIC CHAOTIC SYSTEMS VIA MITTAG-LEFFLER FUNCTION

DR SATHIYARAJ THAMBIAYYA

A stochastic fractional-order chaotic system states that within the apparent randomness of chaotic complex systems, there are underlying patterns, interconnectedness, constant feedback loops, repetition, self-similarity, fractals, and self-organisation.

The synchronisation of chaotic systems has attracted many researchers because of its potential applications in many areas, including biological models and engineering systems. A new type of sufficient results for synchronisation of fractional order stochastic system by using a feedback controller and a stochastic Jacobian matrix has been investigated.

These kinds of results are more interesting and useful because they show the responses and behaviours of the considered system numerically. Numerous numerical assessments have been given to demonstrate the effectiveness of the acquired theoretical effects. By using the same methodology and ideas as discussed in my research article, one can extend the result to fractal fractional stochastic differential equations to model chaotic systems, biology models, Rift Valley Fever model, etc.



Dr Sathiyaraj Thambiayya Lecturer Institute of Actuarial Science and Data Analytics (IASDA)

Lemma 2. Assume that the following diagonal matrix

$$D = \operatorname{diag}(-\lambda_1, -\lambda_2, \cdots, -\lambda_n), \tag{7}$$

for $0 < \lambda_1 \le \lambda_2 \le \cdots \le \lambda_n$. Then, we have the following square norm estimation for Mittag-Leffler diagonal matrices

$$\|\mathcal{M}_p(D\mathfrak{t}^p)\|^2 = \mathcal{M}_p^2(-\mathfrak{t}^p\lambda_1), \quad \|\mathcal{M}_{p,p}(D(\mathfrak{t}-\mathfrak{s})^p)\|^2 = \mathcal{M}_{p,p}^2(-(\mathfrak{t}-\mathfrak{s})^p\lambda_1).$$

Proof. From (7), the Mittag-Leffler diagonal matrix for 1-parameter and 2-parameters are give by

$$\mathcal{M}_p^2(D\mathfrak{t}^p) = \operatorname{diag}(\mathcal{M}_p^2(-\mathfrak{t}^p\lambda_1), \mathcal{M}_p^2(-\mathfrak{t}^p\lambda_2), \cdots, \mathcal{M}_p^2(-\mathfrak{t}^p\lambda_n))$$

and

$$\mathcal{M}_{p,p}^{2}(D(\mathfrak{t}-\mathfrak{s})^{p}) = \operatorname{diag}(\mathcal{M}_{p,p}^{2}(-(\mathfrak{t}-\mathfrak{s})^{p}\lambda_{1}), \mathcal{M}_{p,p}^{2}(-(\mathfrak{t}-\mathfrak{s})^{p}\lambda_{2}), \\ \cdots, \mathcal{M}_{p,p}^{2}(-(\mathfrak{t}-\mathfrak{s})^{p}\lambda_{n})).$$

Since $\mathcal{M}_p^2(-z)$ and $\mathcal{M}_{p,p}^2(-z)$ are completely monotonous [23], one can have the following inequalities

$$0 < \mathcal{M}_p^2(-\mathfrak{t}^p \lambda_i) \le \mathcal{M}_p^2(-\mathfrak{t}^p \lambda_1),$$

$$0 < \mathcal{M}_{p,p}^2(-(\mathfrak{t} - \mathfrak{s})^p \lambda_i) \le \mathcal{M}_{p,p}^2(-(\mathfrak{t} - \mathfrak{s})^p \lambda_1)$$

for any $i = 1, 2, \dots, n$ and $s \in [0, t]$. The proof is completed. \square



The chaotic behaviour of the states of the drive system and response system with fractional power is shown in Figures 1–3. The graphical representation of chaotic behaviours in three dimensions is shown in Figure 4.

The time response of the state trajectories of the error system for fractional power is shown in Figures 5, 6 and 7, respectively.

We have given synchronized time response for of the drive system and response system with fractional power in Figures 8– 11.

Finally, the synchronised time response of the states for the error system with fractional power is given in Figure 12.

Please refer to the figures as follows:

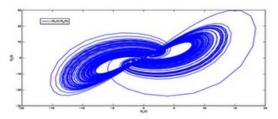
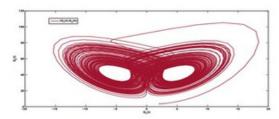


Figure 1. Chaotic behavior of $(\mathring{Q}_1(t), \mathring{Q}_2(t))$ with fractional power p = 0.9.



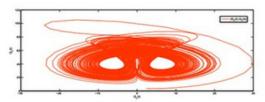


Figure 3. Chaotic behavior of $(\mathring{Q}_2(t),\mathring{Q}_3(t))$ with fractional power p=0.9.

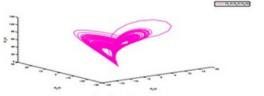


Figure 4. 3-D phase figure of $(\mathring{Q}_1(t), \mathring{Q}_2(t), \mathring{Q}_3(t))$ of the error system (12) with fractional power p = 0.9.

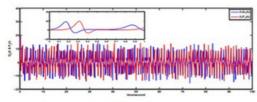


Figure 5. The time response of $(\mathring{Q}_1(t), \mathring{P}_1(t))$ with fractional power p = 0.9

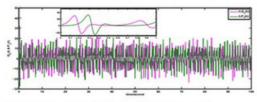


Figure 6. The time reaction of $(\mathring{Q}_2(t),\mathring{P}_2(t))$ with fractional power p=0.9.

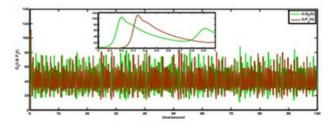


Figure 7. The time reaction of $(\mathring{Q}_3(t), \mathring{P}_3(t))$ with fractional power p = 0.9.

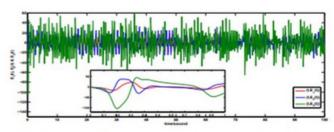


Figure 8. Time reaction of the unsynchronized error states $(\mathcal{E}_1(t), \mathcal{E}_2(t), \mathcal{E}_3(t))$ with fractional power p = 0.9.

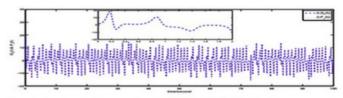


Figure 9. Synchronized time reaction of $(t, \tilde{Q}_1(t))$ and $(t, \tilde{P}_1(t))$ of the drive system and responsible system (12) and (13) with fractional power p = 0.9.

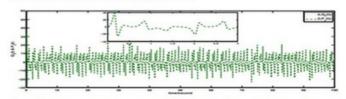


Figure 10. Synchronized time reaction of $(t, \hat{Q}_2(t))$ and $(t, \hat{P}_2(t))$ of the drive system and respons system (12) and (13) with fractional power p = 0.9.

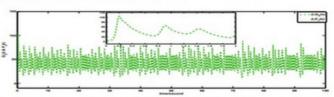


Figure 11. Synchronized time reaction of $(t, \tilde{Q}_3(t))$ and $(t, \tilde{P}_3(t))$ of the drive system and response system (12) and (13) with fractional power p = 0.9.

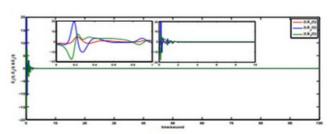


Figure 12. Time reaction of $(\mathcal{E}_1(t), \mathcal{E}_2(t), \mathcal{E}_3(t))$ for the error system (14) with fractional power p=0.9.

The Full Article can be obtained from:

T. Sathiyaraj, Michal Feckan, JinRong Wang, "Synchronization of Fractional Stochastic Chaotic Systems via Mittag-Leffler Function" Fractal and Fractional, 6(4), 192, 2022. MDPI



HOW READY ARE HEPS TO IMPLEMENT MULTIMEDIA AND COMMUNICATION MICROCREDENTIALS? AN ASSESSMENT OF CHALLENGES AND READINESS OF HEPS

ASSOCIATE PROFESSOR DR ALAN KEOY KAY HOOI

Associate Professor Dr Alan keoy kay hooi and his team members including Professor Datuk Dr Rohana Binti Yusof, Associate Professor Dr Ooi Pei Boon, Lilian Kek, Ho Meng Chuan, Assistant Professor Dr Heshalini A/P Rajagopal @ Ramasamy, Assistant Professor Dr Neesha Jothi, Assistant Professor Dr Javid Iqbal, and Dr Shaik Shabana Anjum were awarded the matching grant sponsored by MCMC and UCSI University respectively.

The research project entitled, "How ready are HEPs to implement Multimedia and Communication Micro-Credentials? An Assessment of Challenges and Readiness of HEPs" in December 2022."

Micro-credentials are officially recognized records that demonstrate the completion of learning objectives during shorter, less time-consuming educational or training events. They concentrate on validating competency-based knowledge, outcomes, and/or skills using trustworthy assessments and open standards, which can improve graduates' chances of finding employment.

An institution or organisation may accept a micro-credential for credit or as an attestation for potential employers. Initially, micro-credentials were first established in online discussion forums and other social media platforms to differentiate average users from advanced users by awarding digital badges to the respondents who completed the necessary assessments and assignments, for the purposes of upskilling, as well as learning new skills (McGreal & Olcott, 2022).

Micro-credentials are smaller units of study that are typically shorter than traditional forms of accredited learning and courses leading to conventional qualifications like degrees, even though there is no universally recognized definition for the term. Eventually, learners can earn a digital badge and advance to the next selected digital badge as micro-credentials are completed (Rottmann & Duggan, 2021).

As such, a micro-credential programme would be a perfect match for experts in the communication and multimedia fields to expand their knowledge to the public, as to industry players, to ensure "up-to-date" information.

In Malaysia, one of the important government bodies of multimedia and communication is the Malaysian Communications and Multimedia Commissioner (MCMC), which serves as a regulator for the converging communications and multimedia industries in Malaysia. Among MCMC, there are Six (6) important functional and competency areas, which are 1. Policy and Regulations, 2. Communication Technology, 3. Postal, Courier, and E-Commerce, 4. Broadcasting, 5. Network Security, 6. MCMC Initiative/Others.



Associate Professor Dr Alan keoy kay Hooi



These are the areas that are important for Malaysia's well-being in terms of communication and interaction in daily life. Therefore, by providing adequate training and upskilling through the micro-credential, it would be helpful for the industry players and workers in the communication and multimedia fields to continue growing and expanding.

Nevertheless, even though these are the important areas outlined by MCMC, there are limited resources to understand the real demands of the industry players and workers in the communication and multimedia fields. As such, this is another important objective of the current study to close the gap specifically in the communication and multimedia field.

Challenges Micro-credential from HEPs' Perspective (MC Providers)

Technological Challenges

It is well known that digital badges come with detailed information, however, what exact information will be carried and tracked by the badges (Ellis et al., 2016). This is because the information included in one of the concern issues for a learner to make a decision. Besides, which organisations will be in charge of updating and storing the information and the standard system to keep and display the badges (Selvaratnam & Sankey, 2021).

For example, the learners will compare the similar digital badges earned that can provide the greatest value. Therefore, the technological infrastructure used to verify and validate the badges should be standardized to make it easier for learners to make decisions.

Organisational Challenges

Organisational in a study is defined from the perspective of Institutional (Management) readiness to adopt micro-credentials. The organisations should maintain the quality of accomplished tasks for digital badges, including staff training, process control, and formulated syllabus (Lemoine & Richardson, 2015; Peppler-Beechey & Weingarten, 2021).

Employers do not widely accept digital badges due to the unclear requirements for earning the badge. For example, the same badges may have different values for different employers; thus, the clear definition and quality assurance of the badges are important.

Some of the challenges faced by Institutions in adopting micro-credentials include policies that encourage ownership, rewards, performance measurement, and most importantly the quality of the content and evaluation.

In addition, more information should be available such as questions and programmes (Holbl et al., 2018). The potential programmes will increase the value of badges that are linked with the skills, functions, and competencies of learners to so that they are by employers.

For example, learners who require project management skills will need to focus on infrastructure expansion and development.

The education leaders must be more high-skilled and professionals to educate students to navigate society successfully. Educators need to invest in accessible and relevant professional development to advance their skill sets (Darling-Hammond & Hyler, 2020). According to Hunt et al. (2020), there are four key features to define educators: they are on-demand, shareable, personalized, and competency-based. For example, HEPs need to strengthen the standards of administrators and educators by enhancing their skills and knowledge. In addition, the adult learning theory is largely ignored, as the efforts also ignore the important trend of educators being competent enough to transfer the relevant skills to the learners (Rubin & Brown, 2019). As technology evolves, educators need to adapt to the trend to push learning experiences based on the latest learning technology methods.

The study will also investigate the readiness of people (educators) in terms of their technical skills, technological instructional design readiness, and challenges.



Implications and impact of research for regulatory and/or policy action

Our study, being of an exploratory and interpretive nature, raises a number of opportunities for future research, both in terms of theory development and concept validation. More research will in fact be necessary to refine and further elaborate our novel findings:

- To serve as a guideline for policymakers' challenges faced by HEPs and proposed feasible solutions and supports
- An assessment model for any HEPs to assess their readiness from the perspective of technological, organisational, and educator.

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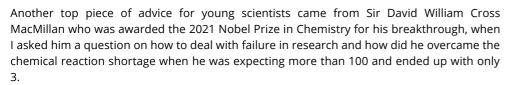
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UCSI UNIVERSITY STUDENT SELECTED FOR A GLOBAL SUMMIT

In January 2023, she got the opportunity to attend Nobel laureates at the Global Young Scientist Summit (GYSS) in Singapore. This year the selection process was quite competitive, the GYSS received more than 1500 nominations from more than 100 institutions around the world, but only 350 applicants from 40 countries were selected to attend the event.

I had a surreal four-day experience filled with inspiration, networking, and engaging with the kind of scientists that you ever dream to encounter along your carrier, yet you got only to read their names attached to all the research and novel findings that they have published. I was honoured to hear from the Nobel Prize winners: Professor Didier Queloz, Prof Brian Kobilka, Sir Tim Hunt, Sir Andre Geim, and Millennium Technology Prize winner Sir David Klenerman. Not only that, I had the opportunity to have a full conversation with Prof Sir Tim Hunt about research and his worst experience, in which his lab caught fire and lost all the study materials! yet he never give up! Instead, he had a positive mindset of "it is ok the lab equipment needed to be replaced anyways, and it was a good opportunity." From this, I learned that during my research I might get discouraged at some point; however we should look at the positive side of every situation and continue to make wonders and open more opportunities for research and study.



Sir David William Cross MacMillan who was awarded the 2021 Nobel Prize, said,

"I was very scared at that moment when everything stopped working. I think as scientists, we are all dealing with failure at some steps along the research. We're not great at talking about failure, but we all know that we must work our way through it. I'm a big fan of this very cliche statement that failure is just another word for experience. You learn from failure; you learn the things which do things, and you build up concepts and ideas. From the failures, you start to realise how more intricate and nuanced things are and from that information, you start to build up your findings. So, failure is important."

On the last day of the summit, I was complimented by Prof. Klenerman, co-founder of Solexa-Illumina Next Generation DNA Sequencing, for which he was awarded the incredibly prestigious Millennium Technology Prize, and Prof. Alison Woollard a British biologist and a lecturer in the Department of Biochemistry at the University of Oxford. They commented that I'm a great science communicator. When did I ask about the relationship between emotional intelligence and scientific communication? Professor Alison commented:

"I like the way that you used the word emotional intelligence. Honestly, I've never really thought of it like that before, however, I think it's true that you form a kind of empathy and a connection with your audience".

After the talk, Professor Alison and I had a long one-to-one conversation about science communication, and she revealed her top tips for communicating in science, which I would like to share with all young scientists across the globe:

- "1.Don't just talk, listen!
- 2. Work out what you're good at and do it.
- 3.Good science communication skills are all about telling stories"



Zainab Abdulsalam

Zainab Abdulsalam is a full-time Ph.D. student and research assistant at the institute of computer science and digital innovation (ICSDI) at UCSI University. Zainab plays a huge role in the field as she is the chairman of the IEEE Computer student chapter branch, Leading the team to spread awareness of innovation and research. Ms Zainab Abdulsalam was looking to the stars for inspiration for her research — not the twinkly ones, the Nobel prize-winning ones.







WITH SIR RICHARD TIMOTHY HUNT (HE WAS AWARDED THE 2001 NOBEL PRIZE)

WITH PROF ALISON WOOLLARD (BRITISH BIOLOGIST)



No.	Funding Scheme	Endorsement by CERVIE	Submission Closing Date
1	Malaysia Grand Challenge, MOSTI Applied Innovation Fund (AIF) Technology Development 1 Fund (TeD 1) Bridging Fund (BGF) MOSTI combatting COVID-19 Fund	Open, no closing date as for now	Open, no closing date as for now
2	URL link: https://edana.mosti.gov.my/		any time before June 2024
3	The France-Malaysia Collaboration Programme for Joint Research 2023 (MVTIGER) https://my.ambafrance.org/mytiger-2023		12 Mar 2023
4	GERAN INSENTIF PENYELIDIKAN YAYASAN PENYELIDIKAN OTAK, MINDA DAN NEUROSAINS MALAYSIA (YPOMNM) 2023 https://www.ypomnm.org/	15 Mar 2023	
5	Geran Collaborative Research Programme (CRP) – ICGEB Research Grants dan CRP-ICGEB Early Career Return Grants https://www.icgeb.org/activities/grants/		30 Apr 2023
6	The Merdeka Award https://www.merdekaaward.my/the-grant/fags		1 May 2023
7	National Conservation Trust Fund for Natural Resources (NCTF) https://www.ketsa.gov.my/en-my/KetsaCore/Biodiversity/Pages/nctf.aspx		Open throughout the year
8	DANA ASIA-PACIFIC ECONOMIC COOPERATION (APEC) TAHUN 2023 BAGI PROGRAM PEMBANGUNAN KAPASITI PEMERKASAAN EKONOMI WANITA		
9	Global Funding for Rubber Innovation https://www.myrubbercouncil.com/globalrubberfund/index.php		Open throughout the year
10	Malaysia Toray Science Foundation (MTSF) https://www.mtsf.org/		31 May 2023
11	Fundamental Research Grant Scheme	28 Feb 2023	
12	National Conservation Trust Fund (NCTF) https://www.ketsa.gov.my/en-my/KetsaCore/Biodiversity/Pages/nctf.aspx		Open throughout the year
No.	Exhibition(s)	Submission Closing Date	
1	Malaysia Technology Expo (MTE) 2022 URL link: https://mte.org.my/	16-18 Mar 2023	
2	International Invention, Innovation & Technology Exhibition (ITEX 2022) URL link: https://itex.com.my/	11-12 May 2023	
No.	Awards	Closing Date	
4	Mahathir Science Award URL link: https://msa-foundation.org/how-to-nominate/ URL link: https://msa-foundation.org/	1 Mar 2023	

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

Advisor

Distinguished Professor Phang Siew Moi

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