

Table 1 - List of Digital Citizenship and Cyberwellness Research

Code	Research Category and Gap Area	Research Title
DCC-1	Guided Research for User Rights and Protection gap	User Rights and Protection for Subscribers of Telecommunications Services through the Provision of an Automatic Compensation Framework
DCC-2	Open Research for User Rights and Protection gap	Understanding the Behavioural Aspects of Cyberbullying and Interventions for Victims, Perpetrators, Parents and Stakeholders
DCC-3	Guided Research for Policy and Regulation gap	Impact and Efficacy of Mandated Public Service Announcements
DCC-4	Open Research for Communication Strategies gap	Understanding the Co-relationship between Internet and Mental Health
DCC-5	Guided Research for Policy and Regulation gap	The Level of Preparedness of Organizations and Employees on Network Security for Remote Office Environments
DCC-6	Guided Research for Adoption gap	Challenges of Emerging Big Data Applications: Privacy vs Security
DCC-7	Guided Research for Adoption gap	Managing Privacy in an Artificial Intelligence (AI) Enabled World
DCC-8	Guided Research for Competencies and Literacies gap	Communications and Multimedia (C&M) Industry Compliance Competency Gap Analysis

1. DCC-1: User Rights and Protection for Subscribers of Telecommunications Services through the Provision of an Automatic Compensation Framework

i. Category, Gap and Target Group

The research falls within the Guided Research Category addressing the gap area of **User Rights and Protection** and targets service providers and commercial and non-commercial users.

ii. Research Problem/Context

Today, the trend and requirement to use telecommunications services have shown an increase in the number of users and network traffic utilisation. Subscribers are increasingly dependent on telecommunications services and when service disruptions do occur, it can have significant repercussions on the user's ability to manage their daily lives. Over the past three years,

service disruptions have consistently appeared amongst the top five types of complaints lodged with MCMC. Complaints with regards to affected services are also directed to the Communications and Multimedia Consumer Forum (CFM).

As a designated forum under the Communications and Multimedia Act 1998, CFM has been given the powers to draw up specific provisions on General Principles of Compensation under the General Consumer Code of Practice (GCC Code) 2003. To date, these have yet to be developed as a specific code on the compensation and protection of consumers of telecommunications and internet services.

iii. Research Aims

This Call for Proposal is desirous of research providing insights in identifying the viability of the following items:

- a. forms of compensation (monetary vs. non-monetary);
- b. modes of compensation (automatic compensation vs. case by case process based compensation);
- c. basis and methods of compensation calculation; and
- d. recommendation as to suitability of form, mode and calculation method for different types of services

Researchers are requested to consider the above areas from perspective of both:

- a. the potential impact of the compensation from an industry perspective; and
- b. the potential regulatory impediments and requirements for implementing a potential compensation duty and mechanism on licensees.

iv. Research Objectives

Researchers are invited to submit research objectives aligned to one or a combination of the identified research aims guided by the following overarching research objectives (ROs):

- a. RO 1 - Conduct comparative studies (industry benchmark, best practices and metrics) of a general compensation duty and model in other countries and recommendations for Malaysia.
- b. RO 2 - Identify consumers' satisfaction level with complaints and compensation process; and compensation and remedy received.
- c. RO 3 - Review consumers' perspective on the need for an automatic compensation framework and potential identification of compensation

provisions for the General Consumer Code of Practice for the Communications and Multimedia Industry Malaysia (GCC).

- d. RO 4 - Propose the necessary features of a fair and effective automatic compensation framework for Malaysia.

2. DCC-2: Understanding the Behavioural Aspects of Cyberbullying and Interventions for Victims, Perpetrators, Parents and Stakeholders

i. Category, Gap and Target Group

The research falls within the Open Research Category addressing the gap area of **User Rights and Protection** and targets victims and perpetrators. Potential stakeholders may include the Ministry of Education, Ministry of Health, parents, the general public and media.

ii. Research Problem/Context

Cyberbullying can have adverse negative psychological effects for both the victim and perpetrator long into adulthood.

Various research have studied the nature of the risk, with data identifying the platforms and user behaviours, which increase the susceptibility of victims and amplify the opportunities for predation for online perpetrators. Past research have also studied the perceptions of online users on cyberbullying, related to its inherent risks and risk mediation approaches.

iii. Research Aims

This Call for Proposal is desirous of eliciting research proposals which go beyond the current body of research focusing on the risk factors of the phenomena of cyberbullying in Malaysia. In providing the context and background for cyberbullying in Malaysia, researchers are invited to conduct a meta-analysis on the current body of research currently available pertaining to risk and harm.

In moving beyond risk, researchers are requested to select one or a combination of the following threads for their submitted research proposals:

- a. Understanding of cyberbullying related attitudinal and behavioural factors;
- b. Detection of cyberbullying incidences;
- c. Interventions for cyberbullying incidences;
- d. Awareness and prevention of cyberbullying incidences; and
- e. Efficacy of legal remedies and instruments.

iv. **Research Objectives**

Potential researchers are invited to submit research objectives aligned to one or a combination of the identified research themes (RTs) guided by the following overarching research objectives (ROs):

- a. **RT 1 - Understanding of cyberbullying related attitudinal and behavioral factors.**
 - RO 1 – Investigate, compile, identify general research themes and categories, and highlight important research work through metadata research
 - RO 2 –Prioritise, rationalise and recommend areas requiring administrative and legislative intervention citing international and localized evidences and trends
- b. **RT 2 - Detection of cyberbullying incidences.**
 - RO 1 – Identify and categorise attitudinal/behavioural models and data variables and sub items adopted for the utilisation of different forms of detection of cyberbullying incidences
 - RO 2 – Assessment of different methods to preempt, monitor and/or report cyberbullying incidences
 - RO 3 – Rationalise and recommend potential mode of detection for consideration citing international and localized evidences and trends
- c. **RT 3 - Interventions for cyberbullying incidences.**
 - RO 1 - Identify prevention and intervention strategies, aimed at perpetrators or victims in coping or assisting the recovery from cyberbullying incidences
 - RO 2- obtain views and perspectives from the parties affected by, responsible for or responsible for the administration of cyber-bullying treatment, response and management
 - RO 3 – Optional objective on testing and validation of intervention(s) aimed at victims, perpetrators, and stakeholders of cyber bullying
- d. **RT 4 - Awareness and prevention of cyberbullying incidences.**
 - RO 1 – Metadata on the classification and comparative merits of pre-emptive approaches to prevent and reduce the incidences of cyberbullying
 - RO 2 – Benchmarking and comparison of best practices of socializing and communicating on cyber bullying and preventative approaches together with a consideration of platforms and methods of delivery
- e. **RT 4 - Efficacy of legal remedies and instruments**
 - RO 1 – Comparative study investigating the effectiveness of laws in external jurisdiction in providing redress, protection and punishment as a legal device aimed at reducing the incidences of cyberbullying
 - RO 2 – Recommendation in the Malaysian context on how cyberbullying legislation is envisioned to operate within the context of the wide eco-system of stakeholders playing a role in the

detection, intervention, prevention, and punishment of cyberbullying incidences

3. DCC-3: Impact and Efficacy of Mandated Public Service Announcements

The research falls within the Guided Research Category addressing the gap area of **Policy and Regulation** implications and targets users, viewers and subscribers.

i. Research Problem/Context

The COVID-19 pandemic has caused a shift away from older ways of doing things to one of new practices at work, school and play which we have come to know as the "new normal."

As part of the "new normal" Malaysians have had to come to grips with a large deluge of informational resources variably related to movement restrictions, health advisories and procedures, application of "standard operating procedures" (SOPs) to adhere to, and access to aid and Government services. During this pandemic period, Public Service Announcements (PSAs) have been employed to great effect to communicate and to share important information on behalf of the Government via such platforms like the short messaging service (SMS), television and online.

ii. Research Aims

This Call for Proposal is desirous of eliciting research proposals to obtain evidences in relation to the Public Service Announcements, providing insights in the following areas of interest:

- a. Public's information seeking behaviours and consumption during the pandemic;
- b. Pattern of PSAs deployment and PSA acceptance at different phases of movement control; and
- c. Comparison of perceptions on official PSAs in relation to information emanating from primary news sources or non-official sources as well as obtaining indications/criteria on "effective or successful" PSAs.

iii. Research Objectives

Researchers are to be guided by the following research objectives but may propose improvements and additional research objectives to better achieve, limit or expand upon the identified research aims and are to choose a combination of two or more objectives listed in ranking below:

- a. RO 1 - To investigate the public's information seeking behaviours during the pandemic;
- b. RO 2 - To gain understanding of the PSAs according to the different phases of movement controls which include but not limited to:
 - definition and purpose
 - classifying the nature of information (health advisory, disaster warning, missing child alert, etc.)
 - the platforms they are deployed on
- c. RO 3 - To investigate user perceptions and indicators of PSAs which includes trust, confidence and desire to use and share; and
- d. RO 4 - To determine the effectiveness of PSAs as a communication platform to convey important information with regard to the pandemic.

4. DCC-4: Understanding the Co-relationship between Internet and Mental Health

i. Category, Gap and Target Group

The research falls within the Open Research Category addressing the gap area of **Communication Strategies** and targets internet users.

ii. Research Problem/Context

In the past year, the world has witnessed unparalleled use of social media channels for interactions and connections with friends, family and community, and the transformation of educational as well as occupational activities into the digital space.

It is therefore pertinent to see how social networks and digital technology have helped individuals and communities in maintaining social connections and how this connectedness has helped them experience health and well-being.

Even though the threat of the COVID-19 pandemic might end with a successful vaccine and treatment, the psychological impact of the disease on the individuals, their families, and communities would stay for much longer. Hence, there is a need to build understanding into how to use positive psychosocial capitals to build mental immunity against any possible future threat and deal with the increased psychological problems emerging from the pandemic.

iii. Research Aim

Research contributions and recommendations are being sought to inform and develop programmes to build community preparedness on being resilient and to rebound from this crisis, in particular for those in the vulnerable or risk groups.

iv. **Research Objectives**

Researchers are invited to generate discussion on one or a combination of the following research themes (RTs) and to develop specific accompanying research objectives:

- a. **RT 1** - Impact of technology use on mental health and wellbeing
- b. **RT 2** - Psychological distress due to social isolation/ distancing at the individual, family and societal level in various risk groups (children and older, women, migrants and poor, ethnic as well religious minorities, people with disability, illness etc.)
- c. **RT 3** - Impact of social connections on personal and social well-being and psychological health outcomes.

5. DCC-5: The Level of Preparedness of Organizations and Employees on Network Security for Remote Office Environments

i. **Category, Gap and Target Group**

The research falls within the Guided Research Category addressing the gap area of **Policy and Regulation** implications and targets Small to Medium Enterprises (SMEs) and their employees.

ii. **Research Problem/Context**

Small and medium enterprises (SMEs) make up 99% of business establishments in Malaysia. Limitations to the movement and business operations in the wake of COVID-19 has encouraged more SMEs' participation in digital platforms. However, this has posed a new challenge to the SMEs as they have to transition to the online or remote working environment. This new norm has given rise to concerns in relation to network security and it is unclear of the SMEs' and their employees' level of preparedness to this transition and the many challenges in doing so.

iii. **Research Aims**

This Call for Proposal is desirous of eliciting research proposals providing the context and background for the SMEs and their employees encompassing issues in relation to the transition towards remote office environment in the wake of the pandemic. This includes the level of preparedness of the SMEs and employees in addressing security threats and attacks, information leakage/theft and challenges during this transition.

Researchers may also consider providing insights through the use of case study for selected SME sectors.

iv. **Research Objectives**

Researchers are to be guided by the following research objectives but may propose improvements and additional research objectives to better achieve, limit or expand upon the identified research aims:

- a. RO 1 - To understand the challenges faced by the SMEs in adopting to the remote office environment;
- b. RO 2 - To investigate the level of preparedness of network security for remote office environment (including SMEs and employees);
- c. RO 3 - To propose network security framework for SMEs employing shared resources and expertise and
- d. RO 4 - To identify roles of the relevant stakeholders, and promote preparedness in operating the remote office environment.

6. DCC-6: Challenges of Emerging Big Data Applications: Privacy vs Security

i. Category, Gap and Target Group

The research falls within the Guided Research Category addressing the gap area of **Adoption** and targets users of telecommunication services, applications and platforms.

ii. Research Problem/Context

Pursuant to the Personal Data Protection Act, 2015 (PDPA), commercial entities are under an obligation to comply with certain obligations and rights afforded to persons providing information. These obligations and rights were further clarified under the Personal Data Protection Standard (2015). This standard encompasses security, retention and data integrity standards, which applies to personal data that is processed electronically and non-electronically.

However, in spite of the introduction of the PDPA and its various subsidiary legislations there have been incidences where unauthorised sharing of information of data subjects has occurred.

Additionally, the level of awareness and understanding of consumers of their rights and protection mechanisms is also unclear and whether there is a correlation between awareness and understanding with the take up of various digital services.

The telecommunications sector is an identified sector that the Personal Data Protection Commissioner has directed to set up a data user forum to develop its own codes of practice for adherence by data users. To date the codes of

practice for the telecommunications sector has yet to be finalised and registered with the Personal Data Protection Commissioner.

iii. **Research Aims**

As the telecommunications sector comes under the purview of MCMC and due to the copious amounts of subscribers' data held by these licenses, the research in this area serves to illuminate on the perspectives of both data users and data subjects.

iv. **Research Objectives**

Research pertaining to the implications of emerging big data applications on individual privacy and security falls under the Guided Research Category. Researchers are invited to submit proposals guided by the following overarching research objectives (ROs):

- a. RO 1 – Investigate perspectives of telecommunications data users in addressing privacy and security issues. Perspectives sought shall include perceived risks and mitigation, industry and/or internal standards being applied process and modes of redress for data subjects, and compliance requirements.
- b. RO 2 – Investigate perspectives of data subjects (telecommunication users and subscribers) on issues pertaining to privacy and security issues and correlation with take up and continued use of applications and services utilising Data Analytics
- c. RO3 – Comparative review of codes of practices and standards being used by local and international telecommunications providers and recommend potential areas for improvement and/or adoption.

7. DCC-7: Managing Privacy in an Artificial Intelligence (AI) Enabled World

i. **Category, Gap and Target Group**

The research falls within the Guided Research Category addressing the gap area of **Adoption** and targets users of telecommunication services, applications and platforms.

ii. **Research Problem/Context**

According to the Malaysian AI Blueprint Annual Report 2020 (AI Blueprint) Malaysia is at Level 3 (Systematic) in its adoption of big data analytics (BDA), i.e., applying Artificial Intelligence (AI) to forecast the future and facilitating

this capability through the securing of recurring operational budgets and by upskilling internal staff to support data science and engineering functions.

The telecommunications, media, sector, aviation and financial services sectors have been identified as the four leading sectors with the highest BDA and AI maturity. The AI Blueprint identified a total of 22 industry verticals involving 150 companies on their levels of BDA and AI maturity. Thus, the growing use of AI and its potential impact throughout all-important sectors is accompanied with a corresponding need to establish and bolster user awareness and knowledge to self-regulate in managing individual privacy whilst still being able to address socio-economic considerations and ensure that AI continues to play a positive role as a catalyst industrial transformation and innovation.

iii. **Research Aims**

The aim of the research is to gain insights on the understanding the role of AI technology in industrial transformation and implications for self-regulation in managing individual privacy.

iv. **Research Objectives**

Potential researchers are invited to submit proposals guided by the following overarching research objectives (ROs):

- a. RO 1 – Provide an overview of the extent of AI usage and modes employed (by selected verticals) and their respective implications to privacy.
- b. RO 2 – Identify current and emerging regulatory gaps on the implications of AI on privacy and outline the elements for consideration in addressing these gaps.
- c. RO 3 - Make recommendations for the development of either a general or sector specific self-regulatory framework identifying basic principles, risks, issues and potential stakeholders.

8. DCC-8: Communications and Multimedia (C&M) Industry Compliance Competency Gap Analysis

i. Category, Gap and Target Group

The research falls within the Guided Research Category addressing the gap area of **Competencies and Literacies** and targets identified C&M industry and personnel.

ii. Research Problem/Context

In furtherance of MCMC's regulatory and developmental function, item 8 of its 10 National Policy Objectives is to facilitate the efficient allocation of resources such as skilled labour, capital, knowledge and national assets. In meeting this objective there is a need to address competence gaps for the improved:

- a. delivery of national C&M initiatives and improved regulatory compliance efficiency; and
- b. regulatory compliance efficiency and impact.

iii. Research Aims

This Call for Proposal is desirous of eliciting research proposals providing insights to understand and ascertain the compliance competency gaps in the value chain in the deployment of C&M services and infrastructure. The gap analysis can also be categorised according to technology competencies or by workforce pool required to deploy the projects (i.e. the readiness of the pool of staff in the C&M Service Providers/Licensees, contractors and/or subcontractors as well as professional certified skills areas required).

iv. Research Objectives

Researchers are invited to submit proposals guided by the following overarching research objectives (ROs):

- a. RO 1 - To understand compliance challenges arising from regulatory processes that require competency bridging;
- b. RO 2 - To propose and identify competencies that promote the development/delivery of national C&M agenda or initiatives;
- c. RO 3 - To propose and identify competencies that promote the compliance of regulatory processes; and
- d. RO 4: To propose and identify the required areas of professional certifications for C&M project deployment (e.g. network planners, technologists, professional engineers, etc.)

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