

## Chapter 5.13

# Development of Research Management in Malaysia

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### Abstract

Research management has evolved significantly in Malaysia from being part of generic administration into a more specialised yet diverse field. The importance of research and innovation in the government's agenda is reflected in the five-year Malaysia Plans and policies. The GERD percentage of GDP has grown steadily each year since 1996. Business enterprises and non-profit organisations are important players in the R&D ecosystem. Universities record the highest percentage of R&D personnel, including contracted staff and seconded academics for research management. Recognising the importance of professional RMAs led to the formation of the Malaysia Association of Research Managers and Administrators (MyRMA). It provides a platform for the community of practice to develop professionalisation pathways.

*Keywords:* Research administration; research management profession; government service scheme; research manager; research ecosystem; community of practice

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## Research Ecosystem Scenario

Malaysia's Institute of Medical Research, founded in 1900 to 'carry out scientific and sustained research on tropical and infectious diseases', was a landmark for the country's public research development (Institute for Medical Research, 2016). Subsequently, other public research institutes (PRIs) were established across various disciplines (Commonwealth of Nations, 2013; Day & Muhammad, 2011; StudyMalaysia.com, 2022). In 'Vision 2020' (1991), the Prime Minister emphasised a scientific and progressive society that contributes to the scientific and technological civilisation of the future as one of nine strategies for achieving a fully developed nation (Mohamad, 1991).

The emphasis on a knowledge-based economy in Malaysia was intensified from the 7th Malaysia Plan (MP) (1996–2000). Since 2008, the GERD from higher education (Fig. 5.13.1) has increased to 20%–30% of the overall GERD (Academy of Sciences Malaysia (ASM), 2021; Ministry of Science, Technology & Innovation, 2016; UNESCO Institute for Statistics, 2020). The higher education institutions (HEIs) have thus intensified their role as solution providers for industries and communities, generating RM1.25 billion in revenue between 2007 and 2012 from research and consulting services (Ministry of Education Malaysia, 2015), which resulted in five universities being accorded Research University (RU) status in 2007. The Malaysia Higher Education Blueprint has 4 out of 10 shifts directly related to research.

The National Science and Research Council (NSRC) was proposed under the 10th MP (2011–2015) to improve R&D governance with a collective alignment of S&T priorities through an effective network of all government research institutes, facilities, and S&T-related entities. Chaired by the Science Advisor, NSRC members are from ministries, government agencies, universities, industries, and the Academy of Sciences (Pillai, 2011).

The Shared Prosperity Vision 2030 Key Economic Grow Areas include research excellence, while the MySTIE framework provides a matrix of socio-economic sectors to S&T drivers to enhance the sustainability and competitiveness of Malaysian industries. In 2020, the Malaysia Open Science Platform (MOSP) launched, signifying our readiness to adopt open research data policy.

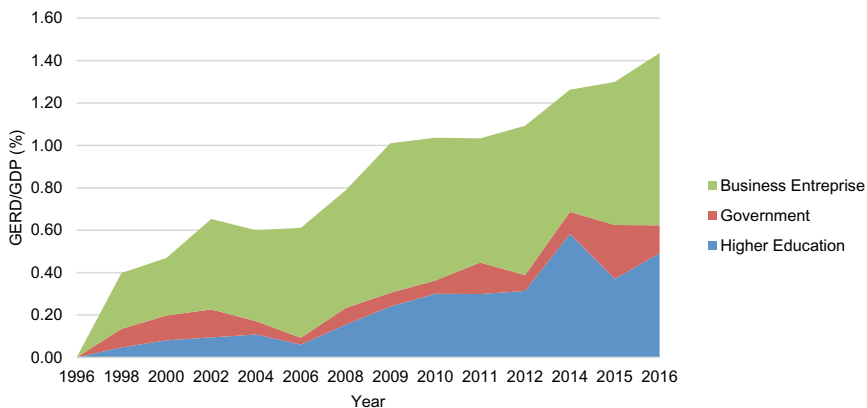


Fig. 5.13.1. The Malaysia GERD by Sector as % of GDP from 1996 to 2016 (Science, Technology and innovation: Gross Domestic Expenditure on R&D (GERD), GERD Per Capita and GERD Per Researcher, 2020).

R&D funders in Malaysia are (i) federal, state, and local governments, (ii) business enterprises including government-linked companies (GLCs), corporations and quasi-corporations, (iii) private sectors and NGOs, and (iv) international agencies. The Ministry of Science, Technology and Innovation (MOSTI) is the main agency for government research grants disbursement to public and private institutions and industry partners. The Ministry of Higher Education (MOHE) is the major funder for HEIs, particularly for fundamental research and RU grants, as well as some pre-commercialisation, prototype grants. Other ministries also award grants, focussing on applied topics in agriculture, health, or environment (MASTIC, 2021). The Collaborative Research in Engineering, Science and Technology (CREST), an E&E industry consortium, exemplifies university- and demand-driven research, development, and commercialisation in line with the emphasis to create impact beyond academia. In 2022, Malaysia's Finance Minister announced RM423 million allocation to the MOSTI and MOHE to intensify research and development (R&D) activities including RM295 million for public universities to continue their roles in the ecosystem while encouraging collaborations with industry.

In Malaysia, 106 HEIs comprising 20 public universities (including 5 RUs), 47 private universities, 9 international branch campuses, and 30 public university colleges are audited for the Malaysian Research Assessment (MyRA) by the MOHE. The highest research rating is six stars. Although university colleges are primarily teaching institutions, going through research assessments enables them to address gaps to upgrade to full universities. In addition to HEIs, there are 73 PRIs from various ministries (Mujani et al., 2014).

Entities conducting research such as universities and research institutes have an administrative team primarily focussed on advising and supporting a core group of researchers and managing processes relating to research. However, they were not formally known as RMAs. The establishment of RUs in 2006/2007 stipulated a research management centre (RMC) to be established within the institution's governance in order to operate within an environment of decentralisation. Setting up of RMCs at universities involved additional staff recruitment to manage the increasing volume of research grants and projects; continuing what had taken place before the inception of RUs, when academics began to enjoy a larger quantum of research funds. Considering a large portion of research grants being disbursed to universities, it is reasonable to assume that universities are the largest employers of RMAs. A national-level Research Management Unit (RMU) was established under the purview of the Economic Planning Unit (EPU) to oversee the grants allocations, project awards, and monitoring (Abdul Hamid, 2018).

## **Evolution of the RMA Role and Some Demographics**

Administrators in the public sector come from diverse academic backgrounds, and are trained in policy implementation and government regulations. It is no different for research management. The need for more manpower and skills became evident with increasing complexities in research funding and execution. Hiring contract staff for the specific purpose and seconding academics to administrative positions were the quickest way to fill that need.

Academics are usually more senior in grade than administrative staff, are able to provide the researchers' perspective, and can act as a bridge between the researchers and management. Up to 30 academics or more may be seconded to various entities related to research management in a RU. This comes at the expense of the academics'

career progression as researchers. Ideally, non-academic professionals should fully assume the role of RMAs and break the hierarchical barriers to act as consultants to academics in managing their research.

In a 2015 perception survey, 50% of 162 respondents from public and private universities agreed that research management required specific skills and should be managed by professionals who have basic knowledge in research, which is vital in managing research. R&D personnel in Malaysia are made up of researchers, managers, administrators, and clerks collectively known as ‘support staff’, and technicians. The full-time equivalent (FTE) by research for support staff and technicians increased from 2008 to 2014 but has plateaued since then, with less than a 2% increment of support staff from 2014 to 2018 (MASTIC, 2021). The number of researchers in Malaysia has increased from 16,348 in 2008 to 73,537 in 2016. As a comparison, the number of research support and technicians are 7,563 and 8,078, respectively, in the year 2016.

An increase in national R&D initiatives should be supported with an increase in R&D support. However, the survey showed that the ratios of researcher to technician and support staff increased from 8.8 and 4.0, respectively, in 2008 to 11.2 and 7.4 in 2010, and up to 9.2 for support staff in 2018 (MASTIC, 2017, 2021). The Association of Commonwealth Universities (ACU) measure 2019 had found that the percentage of staff distribution in a typical Malaysian RU was relatively low amongst institutions within the Commonwealth countries (ACU, 2020). In terms of gender, the higher education sector recorded the highest number of female technicians and supporting staff for R&D, followed by government and business enterprises (MASTIC, 2022).

RMAs can be employed on permanent or contract positions, or secondment as is the case for academics. A 2017 survey looked at RMAs’ academic qualifications, job grades, and job scope. All respondents had RMAs with at least a bachelor’s degree. 83% of them indicated that there were also RMAs with diploma or lower qualifications.

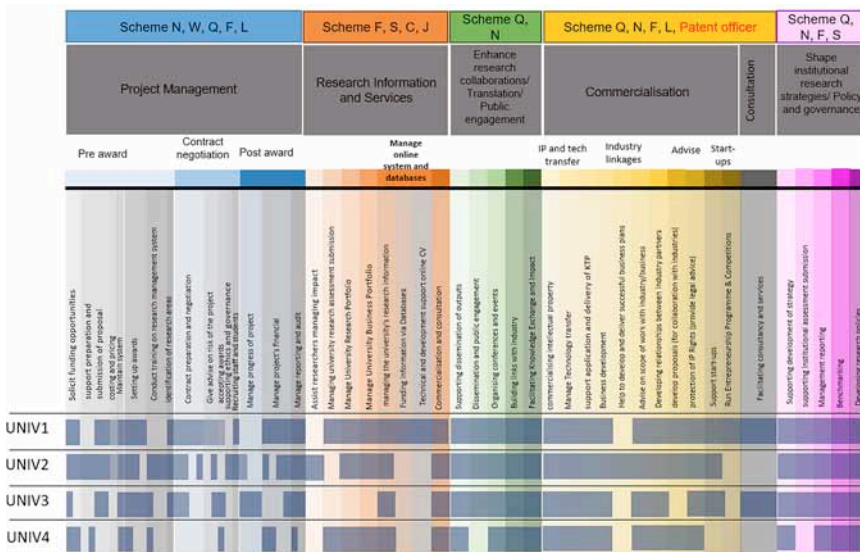


Fig. 5.13.2. Non-academic Schemes Warranted to Universities, Areas in Research Management That Can Be Filled by Staff from the Different Schemes, and Map of the Research Management Functions at Different Institutions with Dedicated Staffs.

More than 92% of the respondents had academics with PhDs seconded as RMAs. Hiring contract staff and seconding academics are common practice in Malaysian universities to cope with the increasing tasks of managing research funds and projects.

Tasks requiring high-level facilitation such as project costing, monitoring, management of grants/funding opportunities, research proposals, research data management, and research profiling and impact writing are carried out by the executives. Academics who are seconded usually head the research office overseeing the operations, but are also involved in strategising for research and making policies.

Overall the survey showed that a significant number of academics are seconded to research management positions. The hiring of new staff at permanent positions occurred more among those of lower grades or clerical level as compared to bachelor's degree holders who would assume executive positions. The latter are hired more on a contract basis. This indicates that there might be constraints in taking executive-level research managers for permanent positions.

In employing RMAs for permanent positions, public universities have to work around the stipulated government service scheme. All appointments to the public service shall be in accordance with the conditions specified in the scheme of service. There is no scheme dedicated to research management. Fig. 5.13.2 shows the non-academic schemes warranted for universities and research management areas that can be filled by these schemes. Capacity building for RMAs in Malaysia should consider RMAs' functions and responsibilities at different institutions. Fig. 5.13.2 shows that larger universities, namely UNIV1, UNIV2, and UNIV4 have more areas filled by dedicated RMAs than smaller ones.

During their course of service in government, employees are reshuffled every five years as part of their career progression. Hiring staff on contract who can be trained for the job may keep the staff for longer-term, but the lack of permanent appointments can cause job security concerns. Upskilling modules should cater for the background disciplines, qualification levels, experience in research management, and future career plans. Short certification or micro-credential courses would be practical and attractive for those doing their stints in the research portfolio, but may not stay long in the department due to the rotation system of government service. Those with the opportunity to remain in research management for longer terms can become certified and take up leadership roles. Among the public service schemes shown in Fig. 5.13.2, the Q scheme is most likely to fully assume research management as an alternative to becoming researchers. This scheme is traditionally given to PRIs and shares similar privileges to the academic scheme at universities.

Looking past the employment requirements, a humanising approach in talent management is imperative, calling for staff engagement to create an emotional, empathetic connection and provide motivational support for them to develop passion in what they do and realise their purpose.

## **Community of Practice**

On 31 July 2019, the Malaysia Association of Research Managers and Administrators (MyRMA), was approved by the Registrar of Societies. It was officially launched by the then Director General of Higher Education Malaysia, YBhg. Datuk Ir. Dr Siti Hamisah Tapsir on 22 September 2019. As an outcome of a project to enhance Malaysia's research management and governance, MyRMA's establishment was a significant milestone, driven by a group of passionate researchers and research managers with a vision to pursue excellence and professionalism in research management. MyRMA aims to (i) facilitate

impactful research by identifying and establishing best practices in research management and administration and (ii) nurture excellence in the research management profession. MyRMA shall be the catalyst to ensure Malaysia's research management heading in the right direction and in being on par with international players (Tan, 2019, 2020).

MyRMA now acts as the platform for RMAs from academic and research institutions, and for funders to interact, exchange ideas, share best practices, and collaborate. It is expected to contribute towards enhancing research management in Malaysia, leading to better research outcomes and returns on investment.

Since its inception, it has actively engaged with fellow associations around the world. In October 2021, MyRMA was accepted as a sister organisation and member of INORMS.

## Future Outlook

The advancement of our research and innovation, as researchers take on more complex projects funded by larger grants, will see the increasing need for professional research management. Building the capacity of RMA professionals is now supported through the MyRMA platform, and can be taken to the next level through certification and continuous professional development programmes. Keeping abreast with developments in other countries through our active networking and participation in joint activities will help us identify and address gaps in our RMAs being on par with international counterparts. We foresee RMAs taking on more significant leadership roles in research management in Malaysia, as well as contributing to policy making and strategising for the nation's research and innovation endeavours.

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