A review of the Hong Kong Research Grants Council

Sarah Parks, Catriona Manville, Katherine Stewart, Louise Lepetit,
Marie-Louise Henham, Miaoqing Yang, Joanna Chataway

RAND EUROPE

For more information on this publication, visit www.rand.org/t/rr207

Published by the RAND Corporation, Santa Monica, Calif., and Cambridge, UK

Preface

The University Grants Committee (UGC) of Hong Kong asked RAND Europe to collect evidence as part of Phase 1 of a review of the Research Grants Council (RGC), which aims to streamline the RGC's operation and enhance efficiency. Phase 1 covers macro issues such as the portfolio balance of the RGC funding schemes, the RGC and assessment panels / committees' structure and good practice in overseas funding agencies.

This report provides the key findings from the evidence gathered and analysed by RAND Europe. The annexes contain an in-depth analysis of the data gathered. The report is intended for the RGC and, more broadly, stakeholders of the RGC in Hong Kong and may be of interest to international funding agencies and research systems.

RAND Europe is a not-for-profit policy research organisation that aims to improve policy and decision making in the public interest, through research and analysis. RAND Europe's clients include European governments, institutions, non-governmental organisations and firms with a need for rigorous, independent, multidisciplinary analysis. This report has been peer-reviewed in accordance with RAND's quality assurance standards.

For more information about RAND Europe or this document, please contact:

Catriona Manville

RAND Europe

Westbrook Centre

Milton Road

Cambridge CB4 1YG

United Kingdom

Tel. +44 (1223) 353 329

manville@rand.org

Table of Contents

Figures

Tables

Abbreviations

ANR	National Research Agency
AoE	Areas of Excellence
A*STAR	Agency for Science, Technology and Research
ARC	Australian Research Council
BBSRC	Biotechnology and Biological Sciences Research Council
CityU	City University of Hong Kong
CRF	Collaborative Research Fund
CUHK	The Chinese University of Hong Kong
DARPA	Defense Advanced Research Projects Agency
DC	Disciplinary Committee
DC(Appeal)	Disciplinary Committee (Appeal)
DC(Investigation)	Disciplinary Committee (Investigation)
DC(Penalty)	Disciplinary Committee (Penalty)
DFF	Danish Council for Independent Research
ECFC	Environment and Conservation Fund Committee
ECR	Early-Career Researcher
ECS	Early Career Scheme
EdUHK	The Education University of Hong Kong
ER	External Reviewer
ERC	European Research Council
ESRC	Economic and Social Research Council
EC	European Commission
EU	European Union

FDS	Faculty Development Scheme
GDP	Gross Domestic Product
GRF	General Research Fund
HDI	Human Development Index
HE	Higher Education
HEI	Higher Education Institution
HKBU	Hong Kong Baptist University
HKPFS	Hong Kong PhD Fellowship Scheme
HKU	The University of Hong Kong
HKUST	The Hong Kong University of Science and Technology
HSSPFS	Humanities and Social Sciences Prestigious Fellowship Scheme
IDS	Institutional Development Scheme
IIDS	Inter-Institutional Development Scheme
ISF	Israel Science Foundation
ITC	Innovation and Technology Commission
ITF	Innovation and Technology Fund
JRS	Joint Research Scheme
LU	Lingnan University
MBIE	Ministry of Business, Innovation and Employment
NIH	National Institutes of Health
NRF	National Research Foundation
NSB	National Science Board
NSERC	Natural Sciences and Engineering Research Council
NSF	National Science Foundation
NSFC	National Natural Science Foundation of China
OECD	Organization for Economic Co-operation and Development
PolyU	The Hong Kong Polytechnic University
R&D	Research and Development
RAE	Research Assessment Exercise
RCUK	Research Councils UK

RGC	Research Grants Council
SAR	Special Administrative Region
SCSF	Steering Committee on Competitive Research Funding for the Self-financing Degree Sector
SF	Self-financing
SFC	Scottish Funding Council
THE	Times Higher Education
THEi	Technological and Higher Education University of Hong Kong
TRS	Theme-based Research Scheme
UGC	University Grants Committee
UK	United Kingdom
UKRI	UK Research and Innovation
US	United States of America

Acknowledgements

RAND Europe would like to thank Rick Rylance and the international Task Force for their guidance throughout this project. We are also very grateful to the UGC Secretariat and staff at institutions and universities for help in the administrative tasks needed for the survey and focus groups. We would also like to thank all respondents to the survey and online consultation and all participants of the focus groups for inputting to the review.

The authors are also very grateful for the valuable input provided by our Quality Assurance reviewers, Molly Morgan Jones and Joachim Krapels.

Executive Summary

Context and objectives

This report explores the strengths and weaknesses of the RGC funding assessment and allocation process and identifies areas for future improvement. It is based on focus groups, interviews, survey, consultation and documentary analysis. It examines the perceptions of academics, universities and institutions, panel members and wider society who engage with the RGC. It arrives at overall judgements about the RGC processes, and discusses potential improvements for the future.

Background to the RGC

The Research Grants Council is an advisory board on research matters to the University Grants Committee, a non-statutory advisory committee which is also responsible for advising the Hong Kong government on the needs of higher education institutions (HEIs) in Hong Kong, including both research and education. The RGC was established 25 years ago in January 1991, in order to distribute funding for academic research projects undertaken by academic staff at UGC-funded universities. In 1991 it was responsible for HK$100m. Over time the RGC has developed, adding new funding schemes, and adapting and developing its schemes. The government has also provided the RGC with additional funding, both to expand the schemes it was already running, and to deliver new schemes specifically initiated by the government. This has included expanding from only funding UGC-funded universities, to also funding self-financing institutions. In the period 2015–2016 the RGC distributed HK$1127m, more than ten times as much as it was originally responsible for when it was founded. The current objective of RGC research funding is to build up research capability in Hong Kong.

Over the last 25 years, research in Hong Kong has developed considerably; 5 of the 8 UGC-funded universities are now in the top 200 in the QS University Ranking for academic reputation, and 2 are in the top 50. The government set up the Research Endowment Fund, distributed by the RGC, in 2009 with an original endowment of HK$18bn and an injection of HK$5 bn in 2012/13 to provide long-term funding stability to support academic research in both publically funded universities and self-financing institutions. With the establishment of the Research Endowment Fund, the annual amount of funding available for allocation by the RGC increased significantly. In view of the increase in funding provision, the number and variety of funding schemes, and the complexity and size of selection and monitoring panels/committees in recent years, the RGC started to work on a consultancy study proposal in 2014. Its aim was to formulate a strategic plan to further streamline its operation and enhance efficiency. In December 2015, the RGC decided that as part of this process it would commission an independent review of the RGC, conducted in two phases, covering the following macro and micro issues respectively:

- Phase 1: Covering macro issues such as the portfolio balance of the RGC funding schemes, the RGC and assessment panels/committees' structure, and good practice in overseas funding agencies.
- Phase 2: Covering micro issues such as the quality of assessment and monitoring processes, means of communication among members of the panels/committees, timeline of funding schemes, and arrangements guarding against conflicts of interest in the assessment process.

Phase 1 of the review was overseen by an independent Task Force of international experts. RAND Europe was commissioned to provide supporting evidence and analysis to this Task Force for Phase 1. This report covers the data and evidence independently gathered by RAND Europe, along with RAND Europe's independent analysis of that data.

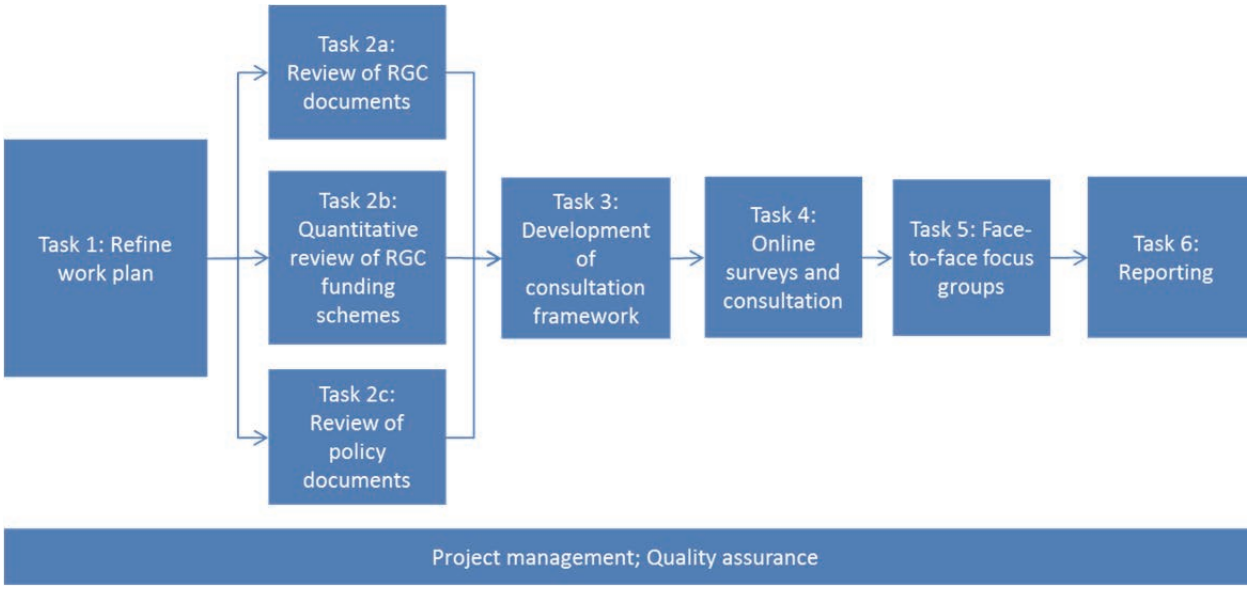
Methodology

Our study aimed to answer the following questions:

- What are the strengths, weaknesses and opportunities for improvement of the RGC funding processes and structures as perceived by RGC stakeholders (the academic community, universities and institutions, RGC panel members and broader society)?
- What can be learnt from comparable international funding bodies to inform improvements to the system?

In order to answer these questions, this study used a multi-method approach consisting of document review, interviews, surveys, an online consultation and face-to face-focus groups (Figure ES1). With each step, we collected and added more evidence, adding further detail and nuance in order to build as complete a picture of the RGC as possible. In particular, the survey and consultation, which were circulated to as broad a set of stakeholders as possible, were used to identify areas of dissatisfaction, or lack of consensus, and these areas were prioritised in the focus groups.

Figure ES1: Overview of methodology



Firstly, in order to better understand the RGC we reviewed a series of public and private documents describing its funding schemes, structures and processes. To place this into context, we also compared the RGC's funding schemes and processes against eight comparator countries, chosen based on international significance to Hong Kong or similarity to Hong Kong. The comparator countries used were: the United Kingdom (UK), the United States (US), China, South Korea, Singapore, New Zealand, Israel and Denmark. For each country we reviewed publicly available documents for one major funding body in order to compare its funding schemes and structure with those of the RGC.

Having built a picture of the RGC and how it compares internationally, we designed online surveys and an online consultation to collect views and experiences of the RGC from as wide a range of stakeholders as possible. The online surveys were developed for stakeholders directly involved with the RGC, including successful and unsuccessful applicants and RGC panel and committee members. The consultation was publicly available and open to all, with the aim of allowing wider stakeholders, such as other government bodies, the Legislative Council, research users and other stakeholders, to input to the review. The surveys received a response rate of between 38 and 48 per cent,[1] and 111 people filled in the online consultation. The survey was made up predominantly of closed questions, with five open-text questions included. Quantitative analysis of the survey data was conducted in R.[2] Qualitative analysis of open-ended questions was carried out by coding the responses to broad analytical categories covering all of the questions.

Finally, 18 face-to-face focus groups lasting one and a half hours each were carried out in Hong Kong during December 2016 in order to develop a more nuanced understanding of the RGC's performance. Through the focus groups we met with 115 people, with an average group size of 6 people. Face-to-face focus groups were carried out with representatives from: the UGC sector, including both researchers and institutional management; the self-financing sector, including both researchers and institutional management; panel members for both sectors; and RGC members. The majority were carried out after the online surveys had closed, and were used to build on the results of the surveys, focusing on questions best explored through dialogue and in particular on areas where survey respondents disagreed most with statements. Following the focus groups we wrote up memos using notes and audio recordings taken during the focus groups. These were uploaded into QRS NVivo 11 software, and coded into 88 sub-categories within the following 4 broad categories: parts of the process, the needs of researchers and broader society, perceptions of the process, and interviewee type.

To develop the key findings, each member of the project team independently came up with five messages for consideration by the Task Force. These overarching messages were developed taking into account the different views of stakeholders, as well as the wider context of the funding system in Hong Kong and available evidence from other jurisdictions on international practice and experience. The messages were then clustered, resulting in a number of key messages which drew together the results from each of the methods.

[1] There were 1143 respondents from the UGC sector, 143 respondents from the self-financing sector, and 288 respondents from panel/committee members.

[2] R is a statistical programming language. See Comprehensive R Archive Network (2017).

Key messages and themes

Our analysis has produced ten key messages, under four key themes. These are summarised below and discussed in more detail in Chapters 2–5:

Achievements of RGC grant giving

Over the last 25 years the RGC has allocated funding to the research community in universities and institutions across Hong Kong. Focus group participants and survey respondents reported a number of strengths of the RGC. In summary, we found that:

- The RGC is Hong Kong's primary research grant funder and has established a positive reputation.
- There were many positive views articulated about what the RGC and associated funding have achieved since its inception.

Processes of RGC grant allocation and review

Our interviewees discussed many aspects of the processes of allocating funding and reviewing applications which are core to the function of the RGC. They highlighted a number of perceived weaknesses of the RGC grant allocation and review process, including how they relate to the wider Hong Kong system, and how aspects such as size of grant compare to comparable jurisdictions. Specific points include:

- The overall value of the funding available is a source of concern to all stakeholders.
- There is a lack of agreement as to whether the current value and duration of awards are correct.
- Grant metrics are now used by the sector as a measure of success to reward both researchers and universities.

Review of the role of the RGC in strategic research directions

The RGC has a published mission and aims, but it does not have a published strategy. This theme focuses on perceptions of stakeholders on the RGC's decision making processes and aims, and potential strategic areas that were mentioned or discussed in the focus groups, surveys and online consultation. The key findings are:

- The RGC's decision making is devolved to panels and the aims of the RGC are not well understood by the sector.
- Participants identified a number of areas for future strategic consideration.[3]

Areas for improvement of grant review processes

In discussing many aspects of the process of allocating funding and reviewing applications, stakeholders highlighted perceived weaknesses in RGC processes and hence opportunities for improvement, with comparisons made to other jurisdictions. Specific points include:

[3] These are discussed in further detail in Section 4.2 of the report.

- Processes are felt to be overly burdensome and could be streamlined.
- Many researchers do not think the grant application and review process is transparent, while panel members were much more positive about transparency.
- The mixed views on the transparency of the process and system could be improved through greater engagement.

1. Introduction

1.1. Background to the Hong Kong research funding system

Hong Kong has 8 publicly funded universities funded by the UGC, and 13 local self-financing degree-awarding institutions. It performs well in international rankings of research with 5 of the 8 UGC-funded universities in the top 200 in the QS University Ranking, and 2 in the top 50.[4]

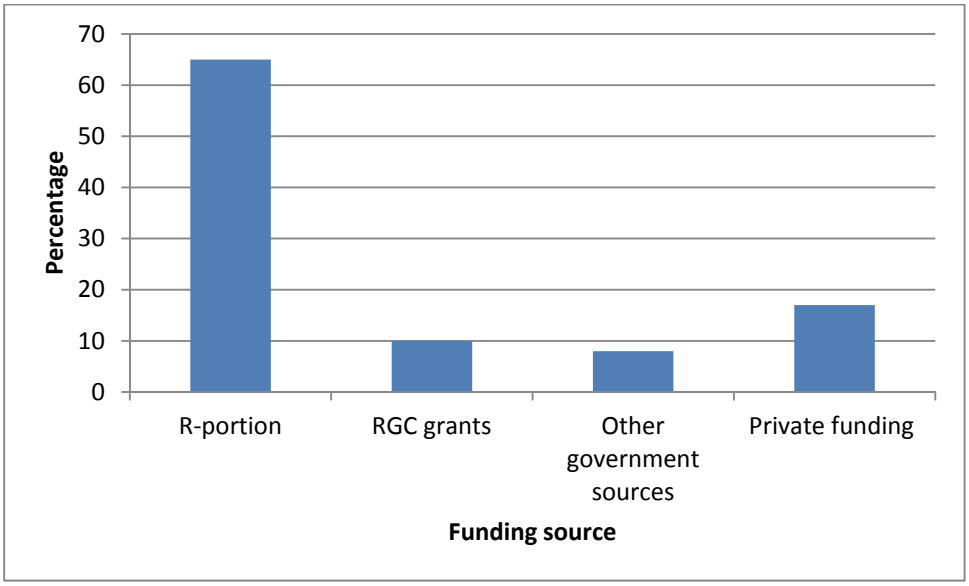
UGC-funded institutions

The eight publicly funded universities in Hong Kong are primarily funded by the UGC, a non-statutory advisory committee which is also responsible for advising the Hong Kong government on the needs of HEIs in Hong Kong, including both research and education, and the RGC, an advisory board on research matters to the UGC responsible for the provision of competitive earmarked research grants. The bulk of the government funding is distributed by the UGC through a block grant, covering both teaching and research activities; 23 per cent of this block grant is allocated for research (the Research portion/R-portion).[5] The R-portion corresponds to 65 per cent of the research funding for UGC-funded institutions, and can be used to cover a variety of costs, including salaries, infrastructure such as buildings and equipment, and other overhead costs. The rest of the research funding comes from competitive grants managed by the RGC (10 per cent), other government sources (8 per cent) and private funding (17 per cent) (Figure 1). Although these figures indicate a diversity of sources for research funding, as later sections of this report will demonstrate, the RGC is widely perceived as the primary grant funder of research within academic institutions.

[4] TopUniversities (2017).

[5] While this money is allocated for research, there is no requirement placed on the universities for it to be spent entirely on research, not on other activities such as teaching. Equally there is no requirement that other money from the block grant is not spent on research.

Figure 1: Source and percentage of funding for research activities at UGC-funded institutions[6]



In Hong Kong, similar to in the UK, a Research Assessment Exercise (RAE) is run at an interval of about six years. This is then used to determine the amount of funding each university gets as the R-portion of the block grant over the next triennia.[7] The allocation of the R-portion of the block grant to each university was initially based entirely on the results of the RAE. However, from 2012/2013 onwards, in a move designed to increase competitiveness, a decision was made to reduce the proportion of the money awarded based on the results of the RAE, and instead distribute some of the money based on each university's success in gaining RGC Earmarked Research Grants (similar to the system used in Australia).[8] This link between the R-portion and competitive grant funding magnifies the importance and significance of RGC funding within the ecosystem. By 2020/21, 50 per cent of the money in the R-portion of the block grant will be distributed based on the RAE, while the other 50 per cent of the R-portion will be distributed based on success in RGC Earmarked Research Grants.[9]

This system has not been without its critics. A 2015 report from the Our Hong Kong Foundation, for example, calls for increased independence for the RGC. The report's authors argue that de-linking research funding from core support would increase the competitiveness of research.[10] If this happened, the RGC would be more akin to a UK research council. This, the report argued, along with a move towards full economic costing, would also make the system more transparent. This view has backing at least in principle from some senior academics.[11] However, some would argue against an independent RGC due to the comparatively small size of the research community and the relatively modest pot of money currently

[6] Note that the R-portion is allocated to universities to use as they wish, and is often used to pay for infrastructure and overhead costs.

[7] The next assessment exercise is likely to be in 2020 and to include an impact element, similar to the Research Excellence Framework carried out in the UK in 2014.

[8] Department of Education and Training (2017).

[9] UGC (2017a).

[10] Tsui et al. (2017).

[11] Personal communication (2016).

allocated to research in Hong Kong. The Our Hong Kong Foundation's answer to this argument is to argue that all publicly funded research money should be channelled through the RGC, along with evaluation instruments that would encourage greater focus on social and economic impact and strategic aims.

Of the competitive funding from the government, more than half is distributed by the RGC. The majority of this (80 per cent) is response mode funding, with no set area and with full autonomy given to academics to set the research agenda. Even with regard to large collaborative calls, such as the Collaborative Research Fund (CRF) or the Areas of Excellence (AoE) Scheme , the majority of funding is designed to be curiosity-led rather than shaped by strategic aims (see Table 1). The amount of funding distributed is based on interest earned on the Research Endowment Fund, a government endowment established in 2009 in order to provide continuous research funding to the UGC sector.[12] This has the benefit of providing a relatively stable stream of income for research but also constrains the available resource.

A number of other government departments also provide competitive research funding. These calls for funding tend to be more targeted and applied. The largest of these are:

- The Innovation & Technology fund (ITF), administered by the Innovation and Technology Commission (ITC), which aims to support midstream/downstream research and development (R&D), foster an innovation and technology culture, and increase industry-university collaboration;
- The Health and Medical Research Fund, administered by the Research Council and under the purview of the Research Office of the Food and Health Bureau, which supports advanced medical research;
- The Environment and Conservation Fund, a fund established under the Environment and Conservation Fund Ordinance and overseen by The Environment and Conservation Fund Committee (ECFC), which provides funding for educational, research and other projects and activities in relation to environmental and conservation matters; and
- The Quality Education Fund, administered by the Quality Education Fund Steering Committee under the Education Commission and supported by the Education Bureau, which funds non-profit making initiatives focused on basic education (i.e. kindergarten, primary, secondary and special education).

Seventeen per cent of research funding at UGC-funded universities comes from private sources.

Self-financing institutions

The self-financing degree-awarding institutions are financed in large part through their teaching activities. They tend to be more teaching-focused institutions, and the majority of them are also younger and still establishing themselves. Until 2014 they did not have any access to UGC or RGC funds; however, in January 2012 the government injected HK$3bn into the Research Endowment Fund. This provides

[12] UGC (2017b).

competitive research funding for the local self-financing degree sector to enhance academic and research development.[13] The funding is administered by the RGC.

1.2. Background to the RGC

The RGC was established in 1991 in order to distribute funding for academic research projects undertaken by academic staff at UGC-funded institutions. In 1991 it was responsible for HK$100m which was distributed through two schemes: the general research fund (GRF), which covers individual research grants, and the Collaborative Research Fund (CRF) (formerly known as Central Allocation), which in 1991 funded large pieces of equipment. Over time the RGC has developed, adding new funding schemes, such as the Early Career Scheme (ECS), which provides individual research grants specifically for early-career researchers (ECRs), and the Humanities and Social Sciences Prestigious Fellowship Scheme (HSSPFS), which provides funding specifically for senior humanities and social science researchers. It has also adapted and developed its schemes over time, for example expanding the remit of the CRF to cover group research as well as equipment.

The objective of RGC research funding is to build up research capability in Hong Kong. The terms of reference of the RGC are:[14]

- To advise the Special Administrative Region (SAR) Government, through the UGC, on the needs of the institutions of higher education in Hong Kong in the field of academic research, including the identification of priority areas, in order that a research base adequate for the maintenance of academic vigour and pertinent to the needs of Hong Kong may be developed; and
- To invite and receive, through the institutions of higher education, applications for research grants from academic staff and for the award of studentships and postdoctoral fellowships; to approve awards and other disbursements from funds made available by the SAR Government through the UGC for research; to monitor the implementation of such grants and to report at least annually to the SAR Government through the UGC.

Over time, the government has also provided the RGC with additional funding, both to expand existing schemes and to deliver new schemes specifically initiated by the government. One such initiative is the Theme-based Research Schemes (TRS), which provides funding specifically for research within predefined themes chosen due to their strategic importance to the long-term development of Hong Kong. Other examples include three schemes specifically designed for the self-financing sector: the Faculty Development Scheme (FDS), Institutional Development Scheme (IDS) and Inter-Institutional Development Scheme (IIDS). In the period 2015–2016, the RGC distributed HK$1.13bn, more than 10 times as much as it was originally responsible for when it was founded, across 16 different schemes (Table 1).[15]

[13] UGC (2017c).

[14] UGC (2017d).

[15] UGC (2017c).

Table 1: Funding schemes administered by the RGC

Sector	Type	Scheme	Details	Aim
UGC sector	Individual project grants	General Research Fund (GRF)	Small-scale, 2–3 year projects, 57 per cent of 2015/16 budget for UGC sector	To fund as many worthy projects as possible across a broad field within the funds available
		Early Career Scheme (ECS)	Small-scale, 2–3 year projects, 9 per cent of 2015/16 budget for UGC sector	To nurture junior academics and to prepare them for a career in education and research
		Humanities and Social Sciences Prestigious Fellowship Scheme (HSSPFS)	1-year fellowship to employ relief teachers/administrators, 1 per cent of 2015/16 budget for UGC sector	To recognise excellence in the humanities and social sciences
	Collaborative research	Collaborative Research Fund (CRF)	Medium-scale, 3–5 years, 10 per cent of 2015/16 budget for UGC sector	To encourage research groups to engage in collaborative research across disciplines and/or across universities with a view to enhancing the research output of universities in terms of the level of attainment, quantity, dimensions, and/or speed; and to enable the acquisition of major research facilities or equipment for collaborative research
		Theme-based Research Scheme (TRS)	Large-scale, up to 5 years, four themes set by government, 18 per cent of 2015/16 budget for UGC sector	To focus academic research efforts of the UGC-funded universities on themes of strategic importance to the long-term development of Hong Kong
		Areas of Excellence (AoE) Scheme	Large-scale, up to 8 years, conducted every 2 years, not awarded in 2015/16 for UGC sector	To build on research areas of strength in Hong Kong and develop them into Areas of Excellence
	Joint research schemes	National Natural Science Foundation of China (NSFC)/RGC Joint Research Scheme French National Research Agency (ANR)/RGC Joint Research Scheme Germany/Hong Kong Joint Research Scheme Scottish Funding Council (SFC)/RGC	5 per cent of 2015/16 budget for UGC sector They vary in size of the scheme, and in competitiveness. In all cases the RGC funds the researcher from the UGC-funded university, and the partner funds the individual from the partner institution.	To promote and further encourage research co-operation and exchanges with regions outside Hong Kong. These can be divided into project grants, and travel/conference/ exchange grants.

Sector	Type	Scheme	Details	Aim
		Joint Research Scheme European Commission (EC)/RGC Collaboration Scheme *PROCORE* -France /Hong Kong Joint Research Scheme		
	PhD scheme	Hong Kong PhD Fellowship Scheme (HKPFS)	PhD fellowships, 216 were awarded in 2015/2016	To attract the best and brightest students in the world to pursue their PhD programmes in Hong Kong's universities
Self-financing sector	Individual project grants	Faculty Development Scheme (FDS)	Small-scale 2–3 year projects, 32 per cent of 2015/16 budget for self-financing sector	To develop the research capability of individual academic staff in the local self-financing degree-awarding institutions so that they can transfer their research experiences and new knowledge into teaching and learning
	Capacity building grants	Institutional Development Scheme (IDS)	Large-scale projects of up to 3 years, 64 per cent of 2015/16 budget for self-financing sector	To build up the research capacity of local self-financing degree-awarding institutions in their strategic areas
	Collaborative project grants	Inter-Institutional Development Scheme (IIDS)	Small-scale funding for up to1 year, 3 per cent of 2015/16 budget for self-financing sector	To enhance academics' research capability in the local self-financing degree-awarding institutions and keep them abreast of new developments and challenging research topics in relevant fields

1.2.1. Structure of the RGC

The RGC itself is made up of local and non-local academics (11 and 13 respectively as at 1 March 2017) and local lay members (4 as at 1 March 2017); it also has about 30 non-academic staff (the Secretariat). It is headed up by a chairman who is a local academic from a UGC-funded university working part-time for the RGC. The chairman is responsible for appointing members of steering committees and assessment panels, including chairs, chairing RGC meetings, and representing the RGC at external meetings. The chairman does not participate in the assessment of research proposals.

The RGC largely operates through steering committees and assessment panels/committees. There are three steering committees to oversee the development and operation of particular funding streams:

- The Major Projects Steering Committee
- The Hong Kong PhD Fellowship Scheme (HKPFS) Steering Committee
- The Steering Committee on Competitive Research Funding for the Self-financing Degree Sector.

In general, each scheme also has at least one assessment panel/committee.[16] Committees and panels are almost all chaired by a member of the RGC, with the rest of the membership made up of a mix of local academics, local lay members, and non-local academics. For all UGC-sector schemes the chair of the committee is non-local. Each funding scheme has one round of applications a year (except for the AoE Scheme, which is available once every two years), and most of the assessment panels/committees meet in person in Hong Kong to distribute funding/select awardees for the fellowship. Except for the HKPFS, peer review by researchers external to the assessment panels/committees is carried out for all RGC schemes. Ninety-five per cent of these reviewers are non-local to Hong Kong, although Hong Kong reviewers are used where it is deemed appropriate for the application.

1.3. Background and purpose of the review

In view of the increase in funding provision, the number and variety of funding schemes, and the complexity and size of selection and monitoring panels/committees in recent years, the RGC started to work on a consultancy study proposal in 2014. Its aim was to formulate a strategic plan to further streamline its operation and enhance efficiency. In December 2015, the RGC mandated that a review of the RGC be conducted in two phases, which would cover the following macro and micro issues respectively:

- Phase 1: Covering macro issues such as the portfolio balance of the RGC funding schemes, the RGC and assessment panels/committees' structure, and good practice in overseas funding agencies.
- Phase 2: Covering micro issues such as the quality of assessment and monitoring processes, means of communication among members of the panels/committees, timeline of funding schemes and arrangements guarding against conflicts of interest in the assessment process.

In order to safeguard the independence and credibility of the review, a Task Force was set up under the Research Group, a standing committee of the UGC, to oversee the Phase 1 review In July 2016. RAND Europe were also engaged as an external consultant to assist the Task Force in the review.

RAND Europe's research aimed to address the following questions:

- What are the strengths, weaknesses and opportunities for improvement of the RGC funding processes and structures as perceived by RGC stakeholders (the academic community, universities and institutions, RGC panel members and broader society)?
- What can be learnt from comparable international funding bodies to inform improvements to the system?

A mixed method approach, using document review, surveys, an online consultation and focus groups was employed to gather data to address these two questions. Each question was addressed through multiple methods (Table 2), allowing for triangulation of results and increased confidence in findings. The

[16] The GRF and ECS schemes have five panels organised by discipline: business studies (B), biology and medicine (M), physical sciences (P), engineering (E), and humanities and social sciences (H).

different methods allow us to approach different stakeholders groups of relevance to the RGC (Table 3). These two research questions are addressed by method in the annexes to the report.

Table 2: Mapping of research method to research question

Research question	Document review	Survey	Consultation	Focus groups
What are the strengths, weaknesses and opportunities for improvement to the RGC funding processes and structures as perceived by RGC stakeholders (the academic community, universities and institutions, RGC panel members and broader society)?		✓	✓	✓
What can be learnt from comparable international funding bodies to inform improvements to the system?	✓	✓		✓

Table 3: Mapping of stakeholder type to research method

Stakeholder	Survey	Consultation	Focus groups
Academic community	✓	✓	✓
Universities and institutions		✓	✓
RGC panel members	✓	✓	✓
Broader society		✓	

The methods built on each other to inform the subsequent stages of the study. In particular, the surveys and consultation, which were circulated to as broad a set of stakeholders as possible, were used to identify areas of dissatisfaction or lack of consensus, and these areas were prioritised in the focus groups.

To develop the key findings, each member of the project team independently came up with five key messages for consideration by the Task Force. These overarching messages took into account the different views of stakeholders, as well as the wider context of the funding system in Hong Kong and available evidence from other jurisdictions on international practice and experience. These were clustered, resulting in a number of key messages which drew the results from each of the methods together. These key themes were then arranged into headings which are detailed with a summary of the supporting evidence in the main body of the report (Chapter 2–5) and related conclusions (Chapter 6). The key themes are:

- The achievements of the RGC (Chapter 2), which outlines outlining the strengths of the RGC as perceived by stakeholders, and building on available comparative data;
- The processes of the RGC grant allocation and review process (Chapter 3), which highlights perceived weaknesses of the RGC grant allocation and review process, including how they relate to the wider Hong Kong system, and how aspects such as size of grant compare to comparable jurisdictions;

- The role of the RGC in strategic research directions (Chapter 4), which covers stakeholders' perceptions of the RGC's decision making and aims, including both strengths and weaknesses; and
- Areas for improvement of grant review processes (Chapter 5), which highlights weaknesses in RGC processes as perceived by stakeholders in the system, and hence opportunities for improvement, with comparisons made to other jurisdictions.

1.4. Overview of evaluation approach

1.4.1. Approach

This study used a multi-method approach consisting of document review, interviews, surveys, an online consultation and face-to-face focus groups. With each step, we collected and added more evidence, adding further detail and nuance in order to build as complete a picture of the RGC as possible.

Firstly, in order to better understand the RGC we reviewed a series of public and private documents describing its funding schemes, structures and processes. To place this into context, we also compared the RGC's funding schemes and processes against eight comparator countries, chosen based on international significance to Hong Kong or similarity to Hong Kong. The comparator countries used were: the UK, the US, China, South Korea, Singapore, New Zealand, Israel and Denmark. For each country we reviewed publicly available documents for one major funding body in order to compare its funding schemes and structure with those of the RGC. The results of this review can be found in Annex A.

Having built a picture of the RGC and how it compares internationally we designed online surveys and an online consultation to collect views and experiences of the RGC from as wide a range of stakeholders as possible. The online surveys were developed for stakeholders directly involved with the RGC, including successful and unsuccessful applicants and RGC panel and committee members. The consultation was publicly available and open to all, with the aim of allowing wider stakeholders, such as other government bodies, the Legislative Council, research users and other stakeholders, to input to the review. The surveys received a response rate of between 38 and 48 per cent,[17] and 111 people filled in the online consultation. The survey was made up predominantly of closed questions, with five open-text questions included. Quantitative analysis of the survey data was conducted in R. Qualitative analysis of open-ended questions was carried out by coding the responses to broad analytical categories covering all of the questions. The results of the surveys and online consultation can be found in Annex B.

Finally, 18 face-to face-focus groups lasting one and a half hours each were carried out in Hong Kong during the week of 5 December 2016 in order to develop a more nuanced understanding of the RGC's performance. Through the focus groups we met with 115 people, with an average group size of 6 people. Face-to-face focus groups were carried out with representatives from: the UGC sector, including both researchers and institutional management; the self-financing sector, including both researchers and institutional management; panel members for both sectors; and RGC members. The majority were carried out after the online surveys had closed, and were used to build on the results of the surveys,

[17] There were 1143 respondents from the UGC sector, 143 respondents from the self-financing sector, and 288 respondents from panel/committee members.

focusing on questions best explored through dialogue and in particular on areas where survey respondents disagreed most with statements. Following the focus groups we wrote up memos using notes and audio recordings taken during the groups. These were uploaded into QRS NVivo 11 software, and coded into 88 sub-categories within the following 4 broad categories: parts of the process, the needs of researchers and broader society, perceptions of the process, and interviewee type. The results of the focus groups can be found in Annex C.

To combine the results from the methods into key messages, each member of the project team independently came up with five key messages for consideration by the Task Force. These were reviewed and clustered around key emerging themes, and then emerging findings were stress tested using the data collected through the various methods, which resulted in the messages evolving and changing. Due to the differing nature of data types, the quantitative results from the survey are used to emphasise the consensus or divergence in views around a key point, and the qualitative analysis from the focus groups, surveys and online consultation provide additional detail and context to points raised.

To protect the anonymity of our respondents and ensure confidentiality, data are presented by type of respondent (e.g. researcher, senior institutional manager, panel or council member). Where possible we have attempted to provide detail by discipline, part of the sector and career stage. We recognise that HEIs do not have a single perspective on the issues discussed and therefore the data cannot be quantified at this level.

Further details on each of the methodologies can be found in methods sections in the relevant annexes.[18]

1.4.2. Limitations and caveats

While we carried out a document review and conducted some comparative work, the study we have done is predominantly based on analysis of RGC data and the views of RGC stakeholders. In particular, the study relies heavily on analysis of feedback from Hong Kong's academics. We believe that the study we have done is useful in informing future decision making, but the following limitations need to be recognised.

The study did not include detailed comparison of RGC management and organisation against other research funders. This analysis would involve interviews with funders in comparator jurisdictions and access to internal documents from those funders.

The study was not an audit and did not assess issues of comparative effectiveness and efficiency in detail.

While we had good engagement overall from a variety of RGC stakeholders, response rates from academics to the survey varied across universities. We have checked that the responses overall for these institutions are similar to those from other institutions, and that the sample matches with available demographic data for universities, and in our assessment the varying response rates do not appear to have compromised research findings. However, clearly widely varying response rates from different institutions was not ideal.[19] In addition, as with many surveys, it is possible that individuals with particular views

[18] The annexes are: Annex A: Background and context; Annex B: Results from the online surveys and consultation; Annex C: Results from the focus groups.

[19] Further detail can be found in Annex B, Section B.2.1.

would be more likely to fill in the survey than others – for example, those who are particularly positive, or particularly negative, may be more inclined to fill in a survey.

Finally, we should note possible bias in focus group findings. The purpose of the focus groups was to explore areas for improvement determined from the survey data (i.e. where there was least satisfaction in the current processes), therefore less time was spent discussing elements that worked well.

A list of further caveats for each method is provided in the relevant annex.

1.5. Outline of the report

This main report describes the key findings of the review. As described in Section 1.3, the key findings from the analysis were clustered into four themes. Each of chapters 2–5 presents one of these themes. Chapter 2 presents our findings around the achievements of the RGC, Chapter 3 presents findings about the current RGC grant allocation and review processes, Chapter 4 presents related to RGC strategy, and Chapter 5 presents possible areas for improvement for RGC grant review processes. Finally, Chapter 6 presents the conclusions.

Following the main report are three annexes presenting the detailed results from each of the methodologies used during the review. Annex A presents the results from the document review and review of comparative jurisdictions, Annex B presents results from the online surveys and consultation, and Annex C presents results from the focus groups.

2. Achievements of RGC grant giving

Over the last 25 years the RGC has allocated funding to the research community in universities and institutions across Hong Kong. This chapter provides information from all four methodologies outlining the strengths of the RGC as perceived by stakeholders. The key findings within this section are:

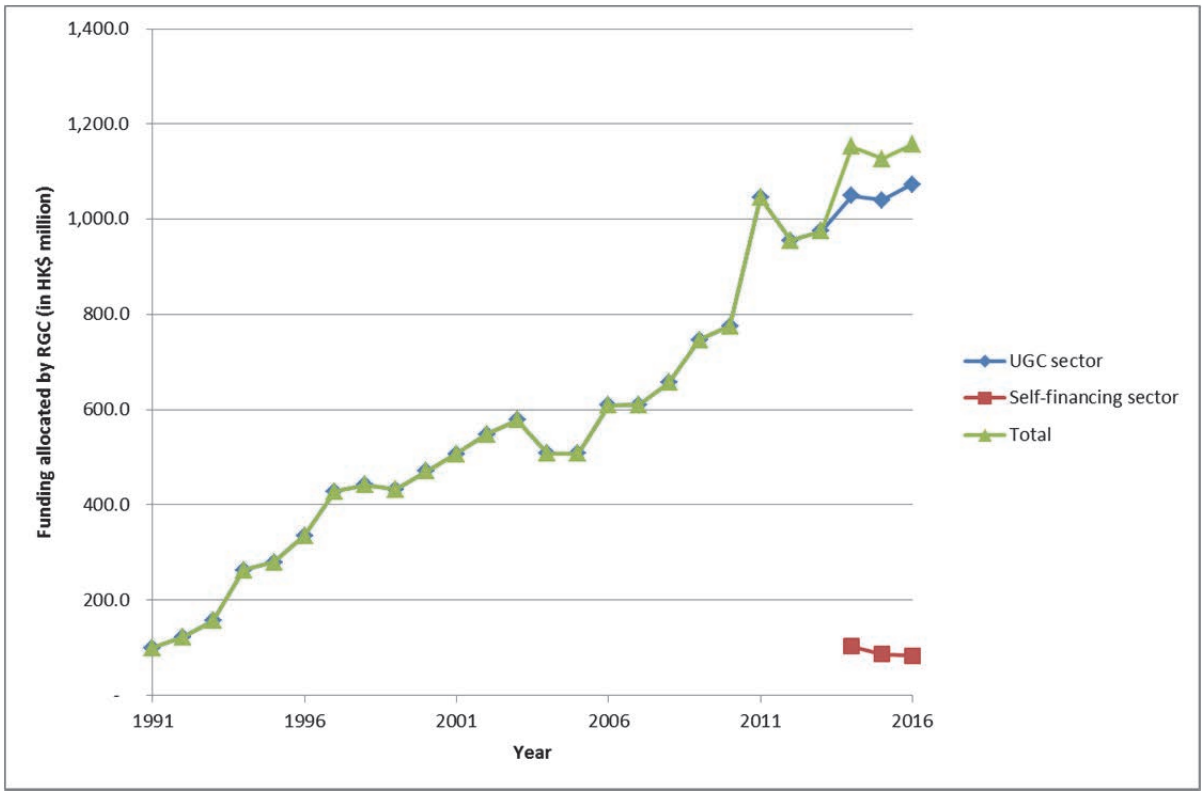
- The RGC is Hong Kong's primary research grant funder and has established a positive reputation.
- There were many positive views articulated about what the RGC and associated funding has achieved since its inception.

2.1. The RGC is Hong Kong's primary research grant funder and has established a positive reputation

2.1.1. The RGC has allocated HK$15.49bn over the last 25 years

The RGC has been awarding grant funding to the academic community since 1991. In this time, the total amount of funding allocated by RGC to support research projects increased from HK$100m in the academic year 1991/92 to HK$1.13bn in the academic year 2015/16 (Figure 2). Over this time the RGC has expanded from funding 2 schemes for academic staff in the UGC sector to funding 16 schemes, covering a range of schemes for academics and PhD students in the UGC sector, as well as 3 schemes for academics in the self-financing sector.

Figure 2: Amount of funding distributed by the RGC since 1991[20]



2.1.2. The funding system in Hong Kong has a strong reputation internationally

The Hong Kong research system has also developed substantially in the last 25 years. Hong Kong universities are now recognised worldwide through rankings, with 5 of the 8 UGC-funded universities in the top 200 in the QS University Ranking for academic reputation, and 2 in the top 50. Another measure that can be looked at is citations per faculty, where 3 universities in Hong Kong are in the top 200.[21] The research funding distributed to these universities, 10 per cent of which is distributed by the RGC and a growing proportion of which is distributed as part of the block grant based on success in RGC grants, has contributed to the development of a competitive research system in Hong Kong.[22]

The RGC's strong reputation globally is also evidenced by its ability to recruit and retain international panel and committee members, including from a number of prestigious universities: 53 per cent of RGC panel members and 95 per cent of their external reviewers are from overseas. In focus groups, a number of international panel members made positive comparisons between the RGC and other funding bodies such as those in China and Australia. They felt that the RGC system is particularly fair, working to minimise

[20] This graph does not take into account inflation.

[21] TopUniversities (2017).

[22] From 2012/2013 a decision was made to reduce the proportion of the R-portion (which accounts for 65 per cent of research funding) awarded based on the results of the RAE, and instead distribute some of the money based on each university's success in gaining RGC Earmarked Research Grants. This decision was designed to increase competition and promote research excellence. Subject to the UGC's future deliberation, 50 per cent of the R-portion will be distributed in this way by 2020/21, accounting for approximately 32.5 per cent of research funding.

conflict of interest through its processes, and that using external peer reviews from relevant experts across the globe helps to ensure that panel members have appropriate levels of influence.

2.1.3. Many grant recipients perceive that the RGC has facilitated their individual careers

When asked in an open-text question in the survey if RGC funding had enabled researchers to develop their work and career beyond the lifetime of the individual grant or project, 50 per cent of researchers who answered the question felt the RGC funding had a positive impact on their career.[23] The most common benefit mentioned in the survey was that the research led to further research projects and ideas. The next most frequently mentioned benefits were enabling particular research projects to be carried out – particularly those of larger scale or longer duration – and a general development of research profile and track record, which allowed researchers to be successful and productive going forward (Table 4). Other benefits included enabling research experience and expertise to be developed in a particular area, and collaboration, which researchers felt enabled them to progress in their research careers.

Table 4: Ways that the RGC funding facilitated careers of individual researchers[24]

Ways that the RGC funding facilitated careers of individual researchers	Number of respondents
Leading to further research projects and ideas	66
Enabling particular research projects – e.g. large scale or longer duration ideas	51
Developing research profile and track record	48
Facilitating collaboration with other researchers, institutions or stakeholders	42
Developing infrastructure through providing resources which can be used after the project	21
Developing skills and expertise	15

[23] 50 per cent, 289 out of 578.

[24] Some respondents described multiple impacts; these respondents have been counted for each impact type they mentioned. Some respondents also said that the RGC funding had facilitated their research career, but did not describe how.

2.2. There were many positive views articulated about what the RGC and associated funding has achieved since its inception

2.2.1. Researchers valued the fact that the majority of funding provided by the RGC is response mode

The majority of RGC funding (80 per cent) is allocated through a response mode rather than a targeted approach.[25,26] Researchers in focus groups placed a high value on the breadth of topics covered in the schemes, particularly the GRF, and on the freedom to propose research, as they feel it provides everyone with equal opportunities. However, a small number of online consultation respondents and focus group participants, including senior managers and panel members, felt that the responsive nature of the schemes limits the creation of strategic research directions and the ability to create critical mass, causing research fragmentation.

2.2.2. A number of researchers and panel and committee members provided positive comments and examples about the RGC, and welcomed the review

The survey asked for respondents' opinions on the extent to which they agreed with aspects of the RGC funding schemes (e.g. inclusivity and correct balance, duration and value of awards). [27] Panel members who responded to the survey generally had a high opinion of the system, with at least 50 per cent of them agreeing and fewer than 20 per cent disagreeing with each aspect (Figure 35). In addition, a third of the online consultation respondents, spanning researchers as well as government and associations, commented positively on the fact that the RGC provides funding support, and felt that it should continue to do so.[28]

The survey asked, based on their personal experience, what respondents would recommend to the RGC from other national systems.[29] A number of recommendations were provided (more detail provided in Section B.2.10), but 12 panel members and 3 researchers commented that they felt the RGC compares well to other systems they know of. Seven of these panel members and 1 of the researchers described it as better than other funding bodies, with 4 of these 8 respondents commenting they felt it was better than the US National Science Foundation (NSF) and National Institutes of Health (NIH).[30]. In other open-

[25] The funding available is separated into a range of separate schemes (the general research fund, the early career scheme, the collaborative research fund etc.), but within these schemes any research topic can be submitted.

[26] For the purpose of this calculation, we have classified the following schemes as responsive: GRF, ECS, CRF, and the AOE Scheme; and the HSSPFS and TRS as directed.

[27] Survey respondents were asked their opinion on the following aspects of RGC funding schemes: inclusivity, balance of awards across disciplines, balance of basic and applied research, balance of research topics of local relevance and international significance, balance of awards between new investigators and experienced investigators, appropriate integration of research and education, whether they reflect the needs of the research community, the monetary value awarded compared to the scope of the projects, and the duration compared to the scope of the projects.

[28] 36 per cent, 40 out of 111.

[29] This question was asked to UGC-sector researchers, self-financing sector researchers, and RGC panel members/committee members.

[30] The survey received responses from: 1143 UGC-sector researchers, 143 self-financing sector researchers and 288 RGC panel members/committee members. This question was answered by 396 UGC-sector researchers, 20 self-financing sector researchers, and 127 RGC committee/panel members.

ended questions on the survey, 11 panel members and 10 researchers commented that they felt the RGC is fit for purpose and works well for Hong Kong.[31]

Positive elements of the RGC funding processes were mentioned in all focus groups, including:

- The ability of the programme to meet the needs of researchers, in particular promoting a culture of excellence within universities
- Confidence in the assessment process, in particular its reliability
- Fairness in reviewing created by mainly using international assessors rather than local assessors
- Academic freedom to suggest research topics
- Volume of researchers supported by the system, compared to funding overseas
- Prestigious nature of RGC funding
- Well-funded nature of some schemes, such as the collaborative one
- Integrity of the UGC as an organisation, and the credit due to the staff working there in maintaining this.

A number of participants in focus groups stressed the importance of valuing the system they currently have. For example, when discussing their wish for a larger investment, one participant nevertheless recognised that the system delivers a lot with the resources available to it.

When conducting the focus groups in Hong Kong, participants invited were keen to attend and provide their views. Without being asked, a small number of participants across the majority of the focus groups stressed to us that they were pleased this review was happening. In particular, they felt it was timely to conduct a review at this point and reflect after 25 years, taking into account changes and developments in the Hong Kong and global research system over time. Participants were forthcoming in providing their opinions and perspectives on how to improve the system going forward, but stated that incremental improvements were needed rather than an overhaul of the system.

[31] The survey received responses from: 1143 UGC-sector researchers, 143 self-financing sector researchers and 288 RGC panel members/committee members.

3. Processes of RGC grant allocation and review

Our interviewees discussed many aspects of the process of allocating funding and reviewing applications which are core to the function of the RGC. In this chapter we highlight perceived weaknesses of the RGC grant allocation and review process, including how they relate to the wider Hong Kong system, and how aspects such as size of grant relate to comparable jurisdictions. In this chapter we draw from all four methodologies. The key findings are:

- The overall value of the funding pot is a source of concern to all stakeholders.
- There is a lack of agreement as to whether the current value and duration of awards is correct.
- Grant metrics are used as a measure of success to reward both researchers and universities.

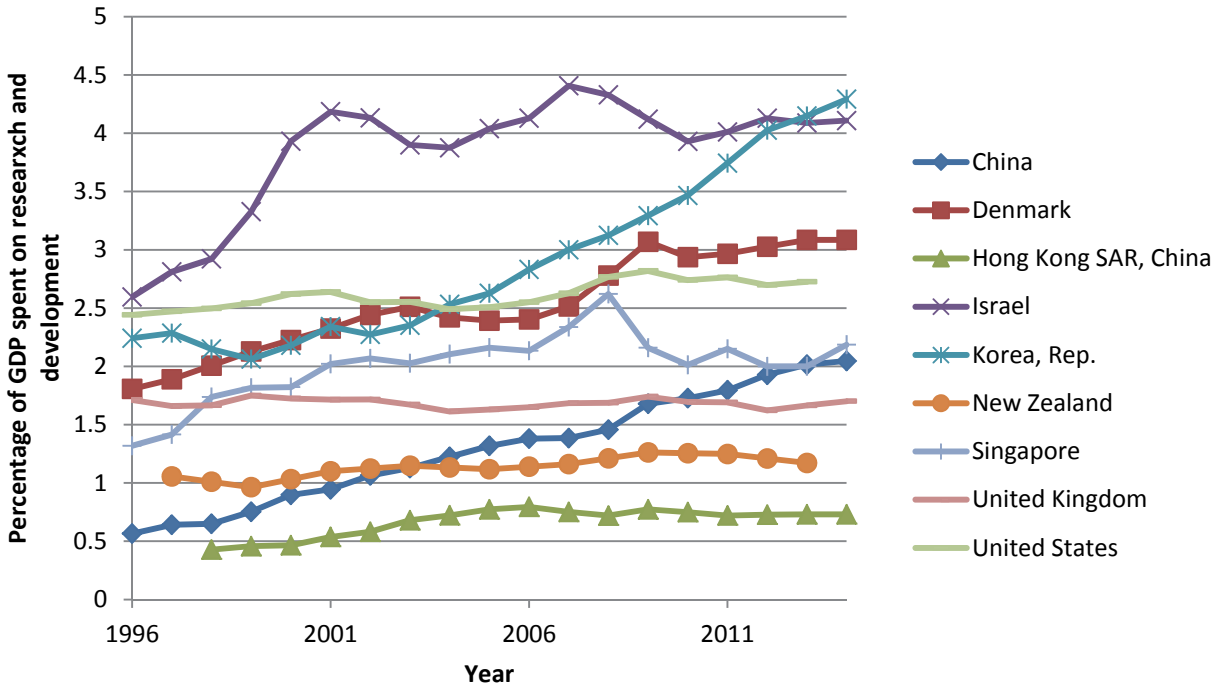
3.1. The overall value of the funding available is a source of concern to all stakeholders

3.1.1. The percentage of GDP that is spent on research in Hong Kong is low compared to other countries

The percentage of Gross Domestic Product (GDP) that is invested in R&D in Hong Kong is lower than all other comparator countries at 0.7 per cent (Figure 3).[32] There has been no increase in the percentage of GDP spent on research in Hong Kong since 2005. This was raised as a point of contention in our focus groups by all types of respondents: researchers from all disciplines, university management, and panel and council members. In over 50 per cent of focus groups, this was the first point raised when participants were asked whether the system meets the needs of researchers and Hong Kong. Comparisons were made to international benchmarks such as European countries, the US, China and Singapore, and it was suggested that levels should be comparable to other countries in the region such as Taiwan, Japan and South Korea, each of which spent above 2 per cent in 2014. In addition, the value of the overall funding available from and distributed by the RGC was the second most mentioned topic for UGC-sector researchers when asked in the survey if there was anything not covered in the survey questions that should be considered in the review.

[32] All the international data in Figure 3 includes spending on defence research. It should be noted that Hong Kong does not carry out any defence research.

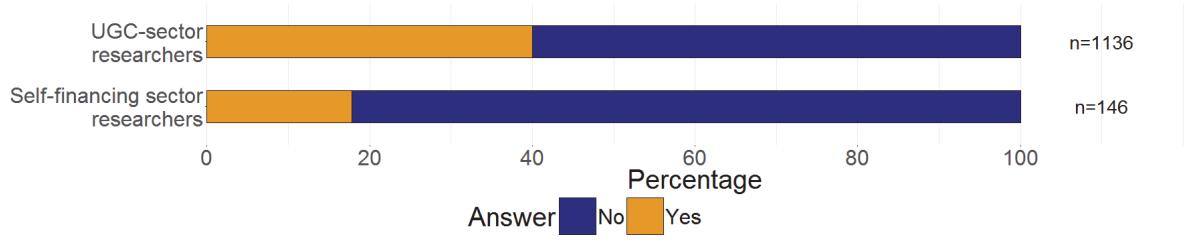
Figure 3: Percentage of GDP spent on research in Hong Kong and comparator countries between 1996 and 2014[33]



3.1.2. The RGC is the sole source of grant funding available for a large number of researchers in the system

For a large number of researchers in the system, the RGC is the sole source of grant funding. Of those who responded to the survey, only 40 per cent and 18 per cent of UGC-sector and self-financing sector researchers respectively said that they had funding from sources other than the RGC or their HEI (Figure 4).

Figure 4: Percentage of survey respondents with funding from sources other than the RGC or their HEI

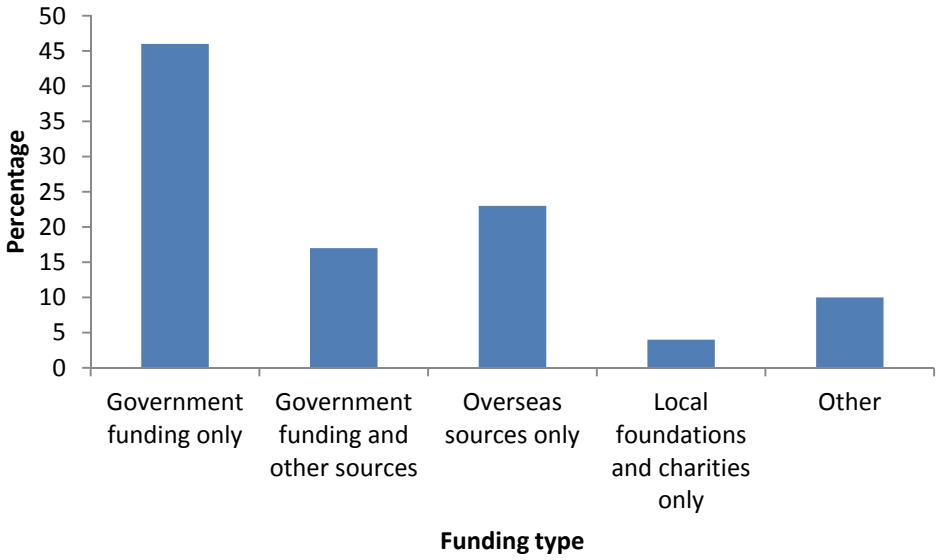


In the UGC sector, of those that do have other funding, 46 per cent of researchers responding to the survey have funding only from other government sources (predominantly the Innovation and Technology Commission, the Health and Medical Research Grant and the Environmental Conservation Fund)

[33] World Bank (2017).

(Figure 5). Another 17 per cent have funding from other government sources or from sources such as international funders, industry, or local foundations and charities. Twenty-three per cent reported funding from overseas only (including government and industry funding), 4 per cent have money from local foundations and charities only, and 10 per cent have funding from other sources such as local or international industry.[34]

Figure 5: Breakdown of different funding sources for UGC-sector survey respondents reporting funding from sources other than the RGC or their HEI



In focus groups, senior managers and many researchers stressed that the RGC was one of few sources of funding for a large number of researchers in the system, with senior managers reporting that money from industry and philanthropy was minimal. For many in the academic community, RGC grants were seen as the only option for basic research. This combination of survey and focus group data highlights the importance of RGC grants in the Hong Kong funding system.

3.2. There is a lack of agreement as to whether the current value and duration of awards are correct

3.2.1. RGC grants are of lower value and shorter duration than many grants in comparator countries

Table 5 shows the length and value of average single investigator grants for the UGC and comparator funding bodies (where data is available). Relative to comparator funding bodies, RGC grants are shorter (with the exception of the NSF) and on average lower in value.

[34] For the self-financing sector researchers, all had funding from other government funding sources and one also had funding from mainland China.

Single investigator grants funded by the RGC have an average value of US$87,000, and an average duration of two to three years.[35] It is worth noting, though, that longer grants could arguably be requested, as the proposal comes from the awardee and is approved by the RGC. In practice, however, longer grants do not seem to be requested. Reasons for this could include a perception in the sector that a 'standard grant' is between two and three years in length and deviation from this may result in funding not being awarded, or that the balance between value and duration may also restrict individuals from asking for more time.

Table 5: Length and value of average single investigator grants from the RGC and comparator funding bodies[36]

Funding body	Country	Grant length (years)	Funding value in thousand USD per year[37]
RGC	Hong Kong	2–3	30
DFF [38]	Denmark	3–5	225
ISF [39]	Israel	5 maximum	46–75
NSF [40]	US	2.5	118

In focus groups, researchers, university management and administrators said that they felt that over time the value of funding, across the system and for individual awards, had neither kept pace with inflation nor reflected the increase in the cost of resources such as staff salaries for posts like research assistants and postdoctoral researchers.

3.2.2. In general, researchers are more concerned with the value of awards than their duration

In the survey, researchers were asked whether they agreed that the RGC grants are of the correct duration and monetary value for the scope of the projects proposed (Figure 6). At least 50 per cent of survey respondents agreed that the duration of awards is appropriate (50 and 70 per cent for UGC-sector and self-financing sector researchers respectively), whereas only 35 per cent and 55 per cent of UGC-sector and self-financing sector researchers agreed on the value of the awards.

[35] Schemes including the GRF and ECS allow project duration of up to five years, though the majority of the projects are 2–3 years.

[36] This data was also available for South Korea, where grants range from US$45,000 to US$715, 000 over 3–9 years. As the range of values is very large, the average could not be calculated, so it has not been included in the table. See: National Research Foundation (2016a).

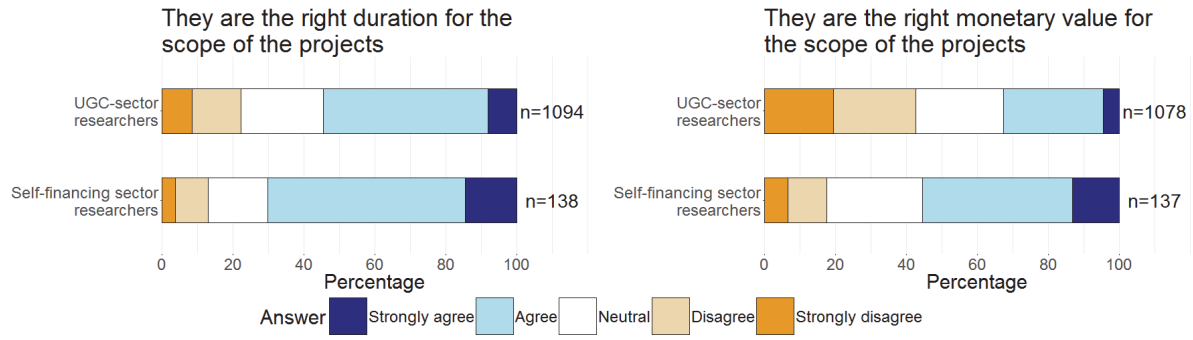
[37] Calculated as a function of available data, for example dividing the overall average value of awards by the average grant length.

[38] Danish Agency for Science, Technology and Innovation (2014).

[39] Israel Science Foundation (2016).

[40] National Science Foundation (2013).

Figure 6: Survey respondents' opinions on aspects of the duration and monetary value of RGC awards



3.2.3. Researchers from different disciplines have different needs in terms of value and duration

In the survey, researchers from all disciplines except business studies[41] had a higher level of disagreement with the statement that the RGC funding schemes offer the right monetary value for the scope of the projects, compared to the statement that awards are the right duration for the scope of the project. Researchers from business studies expressed a higher level of disagreement with the statement that awards are the right duration for the scope of the project (Table 6).

Table 6: The percentage of UGC-sector respondents from each discipline who responded 'disagree' or 'strongly disagree' to each statement

Statement	Percentage of respondents who disagree with the statements					
	Biology and medicine	Engineering sciences	Physical science	Business studies	Social sciences and humanities	Multiple disciplines
Awards are right monetary value for the scope of projects	57 (n=162)	51 (n=210)	39 (n=121)	20 (n=132)	39 (n=379)	45 (n=74)
Awards are right duration for the scope of project	30 (n=151)	16 (n=187)	10 (n=114)	31 (n=113)	22 (n=321)	24 (n=65)

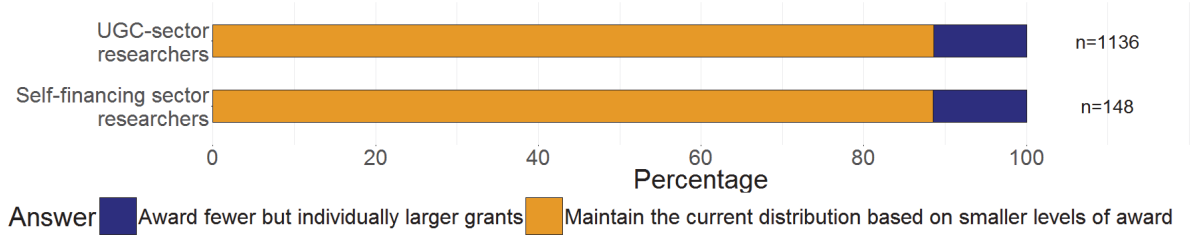
The business studies focus group was also the only disciplinary focus group which did not comment on awards being too small. However, they did comment that awards are too short, as did participants in focus groups from medicine and humanities and social sciences.

[41] This is researchers from biology and medicine, engineering sciences, physical sciences, and social sciences and humanities.

3.2.4. While researchers would like grants to be both larger and longer, many only want this if the total funding available can also be increased.

In the survey, 88 per cent of researchers (in both the UGC sector and the self-financing sector) said that if the total funding level was fixed they would want the current funding distribution to be maintained, rather than awarding fewer but individually larger awards (Figure 7). The literature shows that there is no clear correlation between value or duration of awards and level of outcome.[42]

Figure 7: Survey respondents' preferences on award distribution if the total funding level is fixed



Researchers, senior managers and panel and council members in our focus groups recognised the tension between value of awards and number of successful grantees, accepting that without increasing the overall pot it was not possible to increase both of these elements (length and value). In response to this, focus group participants stressed the importance of RGC funding for sustaining the research community in Hong Kong, which they felt was a primary aim of RGC funding. The majority of focus group participants were therefore in favour of retaining the current value and duration if the total funding allocated was fixed. However, a minority of researchers and council members felt the length should be extended, resulting in a reduction in the number of grants and potentially the number of grant holders.

3.2.5. Providing awards which are perceived to be of low value and short time frame was thought to have consequences for the research conducted

In focus groups, researchers felt that the low value of funding available through the RGC has a variety of consequences for the research system. In particular, they said that it affects the direction of research undertaken in Hong Kong, and the type of research that researchers think it is possible to conduct. For example, one researcher felt it is cheaper to conduct theoretical work using computational simulations or theoretical algorithms rather than experimental design, and therefore this type of research is easier to fit within the available budget. This point was also made by several panel members in focus groups. Senior managers felt that the low value of individual awards, and the lack of other options to apply for, results in individuals applying for funding year on year. Panel members mentioned that the large number of lower-value awards leads to a greater burden on the applicants and reviewers.

Researchers in focus groups were concerned that the short duration of the funding, and the requirement to publish to secure subsequent funding, affect the type of research questions that can be successfully addressed. In particular, they felt that researchers are addressing research questions which produce

[42] Wooding et al. (2004).

incremental advances in knowledge and societal benefit rather than attempting transformational changes. A panel member mentioned that with shorter duration of funding it may be harder to produce research with an impact or benefit for society.

Researchers in focus groups also felt that the short duration of funding makes it difficult to recruit to ongoing positions, such as supporting PhD students when the initial funding will not cover the full length of training. In the survey, online consultation and focus groups, a number of researchers raised particular concerns for early-career researchers regarding the duration of funding. The NSF and the NIH were given as examples from overseas where early-career researchers have longer funding than other award recipients.[43]

3.3. Grant metrics are now used by the sector as a measure of success to reward both researchers and universities

3.3.1. The use of GRF grants in the calculation of the block grant is perceived to have led to GRF awards being used as a university metric in promotion and tenure

The number and monetary value of GRF grants, amongst other RGC earmarked research grants that an HEI holds, are used in the calculation of part of the research element of the UGC's block grant allocation.[44] Focus group participants felt that, because of this linkage, GRF grants are used as a key measure of individual success within an institution and a metric at an individual level for staff. In particular, focus group and survey respondents (25 UGC-sector researchers and one panel member in response to open survey questions)[45] felt that GRF success is used within HEIs as a key criterion for promotion and tenure of individuals. They directly attributed this to its use in the block grant allocation.

3.3.2. Use of GRF grants as a university metric increases pressure on staff and inefficiency in the funding system

Use of earmarked RGC grants as a university metric, in particular GRF grants, led focus group participants to express concern that the consequences of a failed application go beyond a lack of funding from the RGC and the lack of ability to conduct the project proposed, and has serious potential career implications. With this in mind, a number of focus group participants suggested inclusion of the category 'fundable but not funded' so that staff can prove the value of their work within their institution, even if they do not receive a funded award from their application.

Another effect described by focus group participants across all disciplines, and mentioned in open-ended questions in the survey, was an expectation within HEIs that all researchers should apply for funding annually, regardless of whether a researcher feels that they need that funding for their research. Early- and mid-career researchers said that this expectation puts pressure on them, and senior researchers said they

[43] It was reported that NSF provides 5 years for early career compared to 3 years for other schemes, and NIH gives 5 years for early-career researchers and 4 years for researchers who already have an independent award.

[44] UGC. 2017a.

[45] The survey received responses from: 1143 UGC-sector researchers, 143 self-financing sector researchers and 288 RGC panel members/committee members.

were responsible for encouraging this expectation. A number of focus group participants, particularly in business studies and social sciences, provided anecdotal examples where grants applications were submitted whether or not the funding was specifically required. One impact of this practice is on the efficiency of the system. A recent study showed that 80 per cent of time in grant processes is spent writing the application,[46] and a higher number of proposals will also result in an increased burden on the reviewers and panel members.

In addition, there are potential long-term consequences to the coupling of GRF grant success with the allocation formula of the R-portion of the block grant. Due to the small number of other funding sources available, the RGC is already of high importance in the Hong Kong funding system. The coupling threatens to increase the focus of researchers and institutions on receiving competitive grant funding from the RGC, and reduce effort put into obtaining funding from other sources, which is unlikely to encourage the further development of other funding sources.

[46] Guthrie et al. (forthcoming).

4. Review of the role of the RGC in strategic research directions

The RGC has a published mission and aims, but it does not have a published strategy. This chapter focuses on stakeholders' perceptions of the RGC's decision making and aims, and potential strategic areas that were mentioned or discussed in the focus groups, surveys and online consultation. In this chapter we draw from all four methodologies. The key findings are:

- The RGC's decision making is devolved to panels and the overall aims of the RGC are not well understood by the sector.
- Participants identified a number of areas for future strategic consideration.

4.1. The RGC's decision making is devolved to panels and the overall aims of the RGC are not well understood by the sector

4.1.1. The majority of the strategic decisions are devolved to the panels, and therefore it is possible for different panels to have different strategies

Panel members in focus groups noted that the panels have autonomy to decide how funding is allocated between the applications submitted to their panel. For example, the panel actively determines the success rate of applications to the panel, and hence the balance between size and number of awards. As they have control of strategic decisions, they also control the balance of basic and applied research funded and the balance of research of local relevance and international significance funded. However, panel members noted that they award based on excellence and do not specifically aim for targets of types of research.

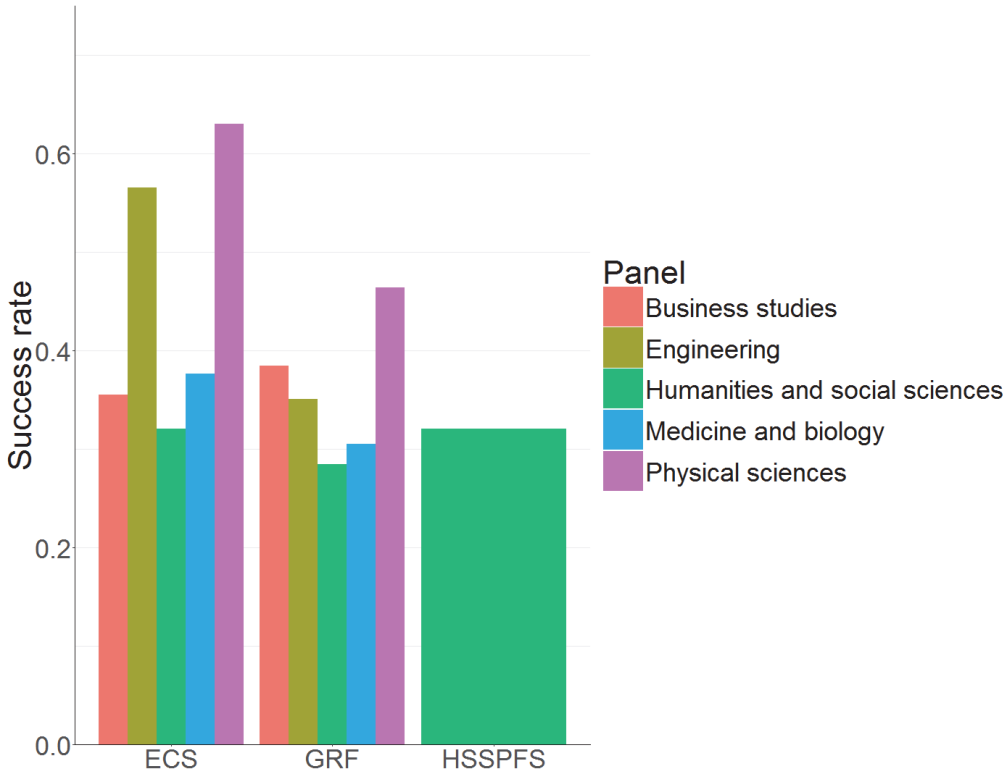
For example, when looking at the balance across the RGC's portfolio between research projects of local focus and those of international significance, 9 per cent of applications, equating to 7 per cent of successful proposals and 10 per cent of unsuccessful ones, have a local focus.[47] Interestingly, 75 per cent of these are submitted to the humanities panel, and across the portfolio there is a 50:50 split between those classified as basic and applied.

Figure 8 shows the difference in success rate between different panels. Physical sciences has the highest success rate for both the ECS and the GRF; it is also the subject with the fewest academic staff in the UGC sector (Figure 27). Humanities, the subject with the highest number of academic staff in UGC-funded universities, has the lowest success rate for both the ECS and the GRF. In focus groups, researchers commented on these differences in success rates, and suggested that panels have different

[47] Local focus determined by the mention of Hong Kong in the application title.

assessment practices which lead to the differing success rates. This appeared to produce an impression that the system is not always fair.

Figure 8: Success rate for individual award schemes broken down by panel



When comparing internationally, the individual grant success rate for RGC grants is the highest individual grant success rate (Table 7). The ISF and NSFC also have high success rates, whereas the UK's Biotechnology and Biological Sciences Research Council (BBSRC) and the NSF both have success rates of around 25 per cent, and the European Research Council (ECR) and New Zealand's Ministry of Business, Innovation and Employment (MBIE) have success rates of around 10 per cent.

Table 7: Success rates for individual grants in comparator countries[48]

Funding body	Success rate (per cent)
RGC (Hong Kong)	32–42
Israel Science Foundation (Israel) [49]	33–35
NSFC (China)[50]	25–30
BBSRC (UK)[51]	25
NSF (US)[52]	24
European Research Council[53]	10
MBIE (New Zealand)[54]	7

4.1.2. The goal of RGC funding is not clear to many stakeholders

During the focus groups, the majority of researchers across all disciplines and panel members could not articulate what the RGC research funding is trying to achieve overall for Hong Kong, and were keen to understand the direction the RGC is planning to take.

Each scheme has an objective (as previously detailed in Table 1); however, there was a lack of clarity expressed in focus groups as to what each scheme is trying to achieve. Examples are provided below:

- There was confusion among HKPFS administrators and some researchers about the purpose of including international students, i.e. whether there is an expectation of capacity building for other countries through this training, or whether it is encouraged for students to remain in Hong Kong after their training.
- Self-financing senior managers had a range of views on whether the FDS is only for early-career researchers requiring development or available for all faculty.
- Some researchers and panel members were unclear on the purpose of the CRF as it funds both large equipment and collaborations, and not all equipment would require collaboration between institutions.

There was also confusion among researchers in focus groups and raised in open questions in the survey, about where the funds distributed by the RGC come from and for which streams of funding the RGC has control over budgetary distribution (i.e. which money the RGC can move between schemes, and which money has been specifically assigned to schemes by the government). For example, in the survey, a small

[48] All data is most recent available; data not available for Singapore and South Korea. Note that this draws on a specific selection of funding bodies in the comparator countries for our desk research. See Annex A for more information on the methodology for this element of the study.
[49] Israel Science Foundation (2016).
[50] National Natural Science Foundation of China (2016a).
[51] Biotechnology and Biological Sciences Research Council (2017c).
[52] National Science Foundation (2013).
[53] European Research Council (2017a).
[54] Reid et al. (2014).

number of respondents (six respondents) commented that they felt the RGC should get rid of the AoE Scheme and TRS in favour of greater investment in the GRF.[55] However, as described in the introduction (Section 1.2), specific funding for the AoE Scheme has been provided by the government, on top of the use of the interest earned on the endowment.

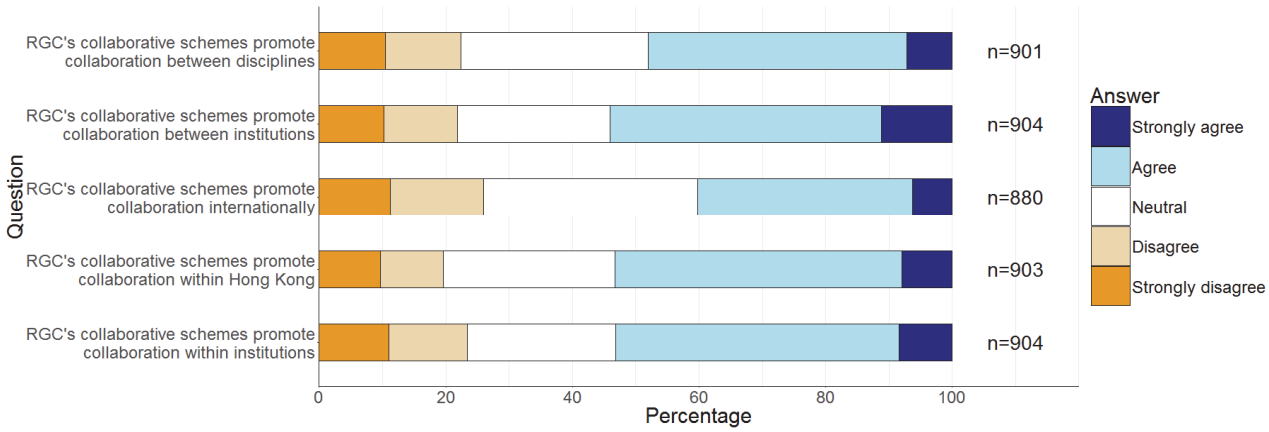
4.2. Participants identified a number of areas for future strategic consideration

4.2.1. Encouraging genuine collaboration

A key aim of specific streams of funding from the RGC is to foster and encourage collaboration. The RGC supports collaboration at a number of levels and through specific schemes. These schemes are the collaborative research fund (CRF), Areas of Excellence (AoE) Scheme and Theme-based Research Scheme (TRS) in the UGC sector.

We have identified four main levels of collaboration: within an institution, between disciplines, between institutions, and with international partners. Over 50 per cent of survey respondents for the UGC sector agreed that the schemes which aim to increase collaboration promote collaboration within institutions, between institutions and within Hong Kong; over 40 per cent agreed that they promote collaboration between disciplines and internationally, demonstrating the support for these schemes (Figure 9).

Figure 9: Survey respondents' opinions on the promotion of collaboration by the RGC collaborative schemes[56]



In focus groups, researchers from the UGC sector and the self-financing sector agreed that the collaborative schemes were effective in supporting collaboration, and examples were given where funding had stimulated collaboration within Hong Kong or internationally. For example, a number of researchers in focus groups stressed that schemes such as the IIDS 'promote research culture' and 'enhances networking'. In particular, there were examples where funding had enabled a critical mass of researchers to

[55] The survey received responses from: 1143 UGC-sector researchers, 143 self-financing sector researchers and 288 RGC panel members/committee members.

[56] The respondents who selected 'don't know' are not shown and therefore the n value differs for each part of this question.

work more efficiently on a shared interest and achieve more than they could individually, or training on the use of equipment by international experts.

On the other hand, some researchers in focus groups queried whether collaboration should be incentivised, and whether linking it to funding forces unnatural pairings between researchers. Anecdotal examples were given where collaborators were named on a proposal to win the grant, and yet had not contributed to the proposal. One tension identified by a participant in the focus group was that support for collaboration within Hong Kong can be difficult as groups are often in competition for funding, although this is likely to be the case in the majority of funding systems.

In addition, the CRF scheme is the mechanism to apply for funding for large equipment, which is often used across institutions, thereby requiring coordination or collaboration to use the equipment. Some participants in the focus groups queried the need for a link between infrastructure investment and collaboration, and suggested this element should be split out and funded elsewhere.

4.2.2. Measuring academic excellence for research serving different aims

There were divergent views in focus groups on whether all research (across disciplines and between types of schemes) is assessed against the same quality threshold. Some focus group participants reported that the required level of quality is the same irrespective of sector and scheme, whereas others felt that different scales are applied depending on the aims and remit of the funding scheme. For example, self-financing assessment panel members reported that for the FDS scheme, the quality of proposals is very similar to those that would be submitted in the UGC sector to the GRF; however, some researchers felt the quality threshold is or should be lower for the self-financing sector.

There was also a lack of consensus on whether all research should be assessed on the same quality threshold. This covers a range of areas, including:

- Whether it is appropriate to expect the same quality from researchers in the UGC sector and the self-financing sector given the different missions of these institutions, and the different expectation on academics in terms of teaching load.
- Whether research of local relevance can be of the same quality as research of international significance in all disciplines and therefore whether research of local relevance can be considered academically excellent.
- Whether basic research and applied research can be measured on the same scale given their different aims.

Two researchers also raised concerns in focus groups that using different quality thresholds may have an impact on the international reputation of the Hong Kong system.

4.2.3. Valuing broader societal impact

For the ECS and GRF schemes, panels assess whether the applications are basic or applied.[57] For both schemes, 65 per cent of the grants awarded have been classified as basic research, and 35 per cent have

[57] The RGC defines basic research as research for the sake of advancing the frontiers of knowledge regardless of whether it would provide immediate benefit to mankind, and applied research as efforts directed at meeting certain functional requirements which

been classified as applied research (Figure 10). In addition to being more numerous, basic proposals are also more successful than those classified as applied (Figure 11).[58]

Figure 10: Proportion of awarded grants classified by panelists as basic or applied

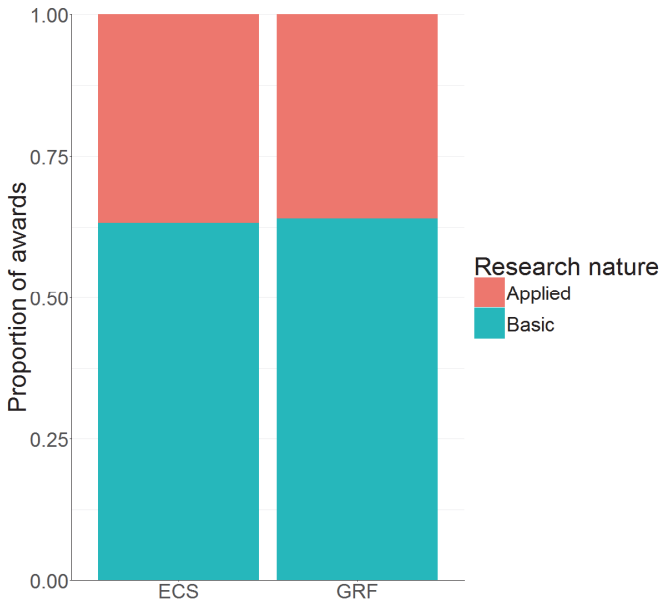
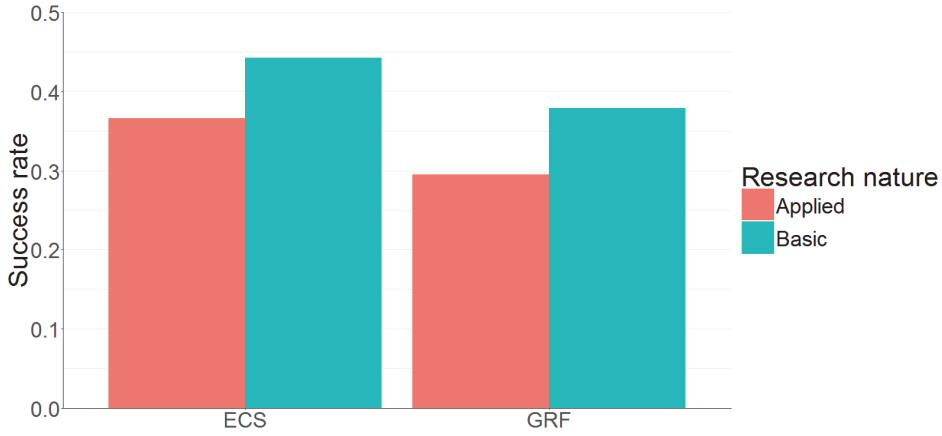


Figure 11: Success rate of applicants to RGC scheme, split by whether panels define the research as basic or applied



In general, researchers and panel members in focus groups did not seem to expect the research carried out in Hong Kong to provide wider benefit to society. In the survey, respondents were asked to rank their top

involve the application of theories to a specific area or for a specific purpose, and/or to enhance human life in the short/medium term.

[58] There is a statistically significant difference in the success rate between basic and applied applications for both the ECS and for the GRF. Therefore, if it is assumed that basic and applied applications are of equal quality, basic applications are more likely to be awarded. This is true for the medicine and biology panel for the ECS, and all panels except the business studies panel for the GRF.

5 out of a set of 15 potential assessment criteria.[59] All respondent types ranked academic merit and originality above 'benefit to society'; however, 'benefit to society' did appear in the top five for all types of respondents (Table 8).

Table 8: Top five most selected assessment criteria for each respondent type

	First	Second	Third	Fourth	Fifth
Panel/ committee members	Academic merit	Originality	Track record	Feasibility in implementation	Benefit to society
Self-financing sector researchers	Originality	Academic merit	Benefit to society	Feasibility in implementation	Local relevance of project
UGC-sector researchers	Academic merit	Originality	Track record	Benefit to society	Feasibility in implementation

In focus groups, researchers, institutional management and panel members had a range of views about the weight placed on local relevance versus academic excellence in RGC assessment processes, given the presence of other government schemes specifically aimed at funding applied or locally relevant work, such as the ITF. A number of researchers at all stages of their career felt that Hong Kong, as an international hub, should not be considering local relevance but rather working on international issues which would, by default, be important to but not limited to Hong Kong. An example of which that was given was smart cities. In particular, there was a concern from senior managers, and a researcher from business, that research that is locally relevant or applied will not be accepted for publication in a top journal, which is an individual criterion for promotion within HEIs. Linked to this, a panel member for the GRF stated that the panel looks for global outputs, which they felt could be difficult to achieve with locally focused research. Senior managers in universities, however, are looking at ways to combine the publication requirements with local relevance; for example through inclusion of the local context in a research project or using local data for part of it.

[59] See full survey protocol in Section D.1.

5. Areas for improvement of grant review processes

This chapter highlights weaknesses in RGC processes as perceived by stakeholders in the system, and hence opportunities for improvement, with comparisons made to other jurisdictions. It draws from all four methodologies. The key findings are:

- Processes are felt to be overly burdensome and could be streamlined.
- Many researchers do not think the grant application and review process is transparent, while panel members were much more positive about transparency.
- The mixed views on the transparency of the process and system could be improved through greater engagement.

5.1. Processes are felt to be overly burdensome and could be streamlined

5.1.1. Having one round of applications a year can have a negative impact on research careers, but increasing the number of rounds may raise the burden on reviewers and panel members

In general, each RGC funding scheme has one round of applications a year. This was noted by researchers in the survey (21 UGC-sector researchers and 6 panel members) and focus groups to be inefficient and to have a significant impact on careers, because if an applicant is unsuccessful in obtaining a grant they have to wait a year until they can reapply.[60] Panel/council members in focus groups agreed that a system with multiple rounds would be preferable; however, they felt that this would not be feasible with the current system and human resources available, particularly due to the reliance of the system on international panel members.

In open-text questions in the survey, a number of researchers suggested limiting the number of grants researchers can apply for/hold at any one time. In the survey and in focus groups, researchers noted that it is inefficient to have to write a grant application every year. They felt that limiting the number of applications would reduce the burden on reviewers and panel members. The NSF, NSFC, Natural Sciences and Engineering Research Council of Canada (NSERC) and the Australian Research Council (ARC) were all given as examples of funding bodies where there is a limit on the number of grants a researcher can hold at any one time.

[60] The survey received responses from: 1143 UGC-sector researchers, 143 self-financing sector researchers and 288 RGC panel members/committee members.

5.1.2. The length of time it takes to hear the outcome of an application, and the timing of the grant cycle, were sources of concern to researchers

In focus groups and the survey, many applicants reported having to wait nearly a year to hear the outcome of their application. This was widely seen as being too long, though it would be interesting to establish elapsed time for funding applications in other jurisdictions in order to understand whether this is unusual. For example, research councils in the UK, such as the Economic and Social Research Council (ESRC), aim to make a decision within 26 weeks, but it should be noted that the ESRC committee meets three times a year whereas RGC panels meet once a year.[61] For ERC advanced grants and starting grants, for which there is one round of applications a year, the respective turnaround times between application and decision are 13 and 11 months.[62] Researchers (particularly from business studies) expressed frustration at having to wait so long to work on an idea, and suggested that due to this delay they may not submit their best ideas for funding from the RGC.

A number of researchers in focus groups and the survey wanted to have the ability to respond to reviews. One suggestion from the survey was to have a 'right to reply' system, where applicants receive reviewer's comments before the panel meeting and can provide responses, which are taken into account by the panel along with the reviews. Participants gave examples of funding bodies which have this system, including ARC and some European funding bodies. Further work would be needed to confirm whether or not this is standard practice in other funding bodies.

Researchers in focus groups and surveys also felt that shifting the timing of the grant cycle to earlier in the year would be beneficial. Currently, most researchers receive their grant funding at the start of the academic year (in September). They felt that if they received the money at the start of the summer instead, they would have time to work full-time on the grant at the very start, which would help them initiate the research. The current timing of grant awarding was also felt to be too late to hire good PhD students or postdoctoral researchers to conduct the research required.

5.1.3. The level of declaration currently required makes researchers feel like they are not trusted, and can cause researchers not to suggest reviewers

In focus groups, researchers across disciplines reported being required to make a large number of declarations on the application form, including:

- Current and previous submitted and awarded grants
- Publications related to their proposed research topic
- Relationships with suggested reviewers.

Researchers in focus groups reported anecdotal instances of colleagues who had unintentionally misdeclared information, particularly relationships with reviewers, and then been subject to long disciplinary processes and perhaps disqualification. They expressed fear that they would make mistakes

[61] Economic and Social Research Council. 2017.

[62] For deadlines of grant applications for the ERC, see European Research Council (2016); for timeframes for results see European Research Council (2017b) and European Research Council (2017c).

and have their application disqualified. Supporting the view that incorrect declaration can lead to disciplinary proceedings, one panel member commented that his impression is that about 90 per cent of the cases that reach the disciplinary panel are related to declaration.[63]

Fear of misdeclaration led a number of researchers in focus groups to note that they do not suggest reviewers in case they are punished for forgetting to mention a relationship that the reviewer might mention. This limits the value of crowd-sourcing reviewers. Some panel members commented that the nomination of reviewers was useful to them to ensure they can find appropriate reviewers and expand the pool of reviewers available to the RGC, although others thought that nominated reviewers tend to be biased and so the system is not needed.

Unrelated to this review, at the RGC meeting in December 2016, the RGC decided to remove the section for PIs to nominate external reviewers in view of the availability of the RGC's sizable database of external reviewers and easily accessible resources on the internet. Misconduct cases due to non-disclosure of relationship with the nominated external reviewers will therefore not be possible in future.

5.1.4. The submission process and website were felt to be satisfactory, but could be made easier to use and more efficient

In focus groups, the majority of researchers felt the submission process was satisfactory, but some suggested improvements. The majority of the suggestions, from both the survey and the focus groups, related to making the submission system more user-friendly. Researchers noted that they felt that the instructions for proposals could be shortened and simplified, and that the application tool was difficult to use. One survey respondent commented that 'it could take weeks just to fill the information in'.

A suggestion put forward in both the surveys and the focus groups was to reduce the amount of manual re-entry required by storing information entered into the system between years and filling it in automatically, so that applicants do not have to enter information themselves multiple times. Respondents suggested that this would help improve efficiency in the submission process.

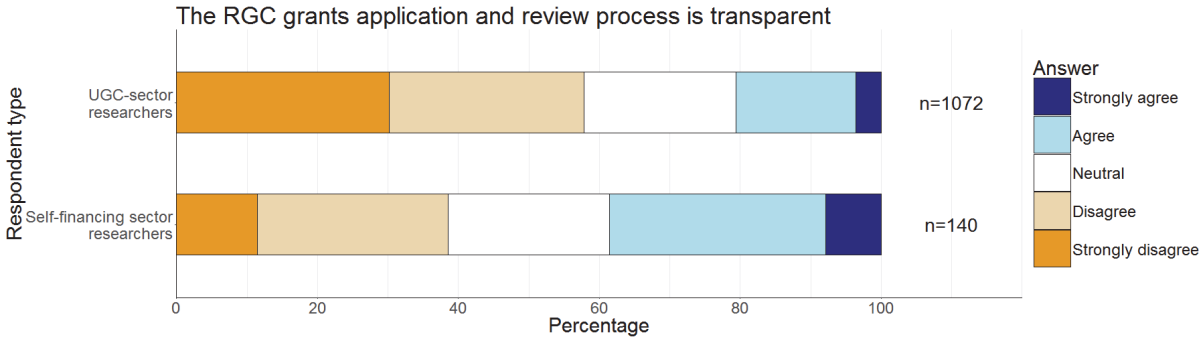
5.2. Many researchers do not think the grant application and review process is transparent, while panel members were much more positive about transparency

5.2.1. Many researchers do not think the grant application and review process is transparent

In the survey, between 40 and 60 per cent of all kinds of researchers did not feel that the RGC grant application and review process is transparent (Figure 12). Lack of transparency was also the issue most frequently mentioned by UGC-sector researchers in open-ended questions in the survey.

[63] Between 2014/15 and 2016/17, 78 per cent of cases brought to the DC were related to non-disclosure: 30 alleged cases of non-disclosure of relationship with reviewers (61 per cent), and 14 alleged cases of non-disclosure of similar/related projects (29 per cent).

Figure 12: Researchers' opinions on whether the RGC grants application and review process is transparent



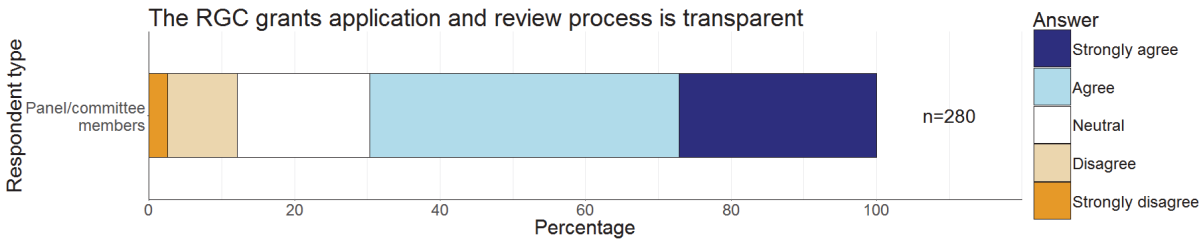
When asked about transparency in focus groups, the majority of researchers said that they felt the application and review processes are not transparent. Across the focus groups, we heard contradictory understandings of the process and many researchers in the focus groups highlighted elements of the process that they were not familiar with. These aspects included panel membership, suitability of reviewers to assess particular applications, nomination of reviewers and number of reviewers per application.

The perception of transparency appears to also be linked to perceptions of fairness and reliability. Fifty-two per cent of researchers in the survey who disagreed that the RGC grant application and review process is transparent also disagreed that the process is both fair and reliable, whereas only 8 per cent of researchers who disagreed that the process is transparent agreed that it is both fair and reliable. Participants in focus groups also commented that they do not understand the process, and therefore when they receive negative results that they do not understand or feel are justified, it makes them feel that the process is unreliable and unfair.

5.2.2. Perceptions of transparency appear to increase with familiarity with the system

In contrast with researchers, 79 per cent of panel/committee members who responded to the survey agreed that the RGC grant application and review process is transparent (Figure 13). In focus groups, panel members generally agreed that the system appears transparent to those who have experience of it through participation on panels and committees. They also felt it is as fair and reliable as possible.

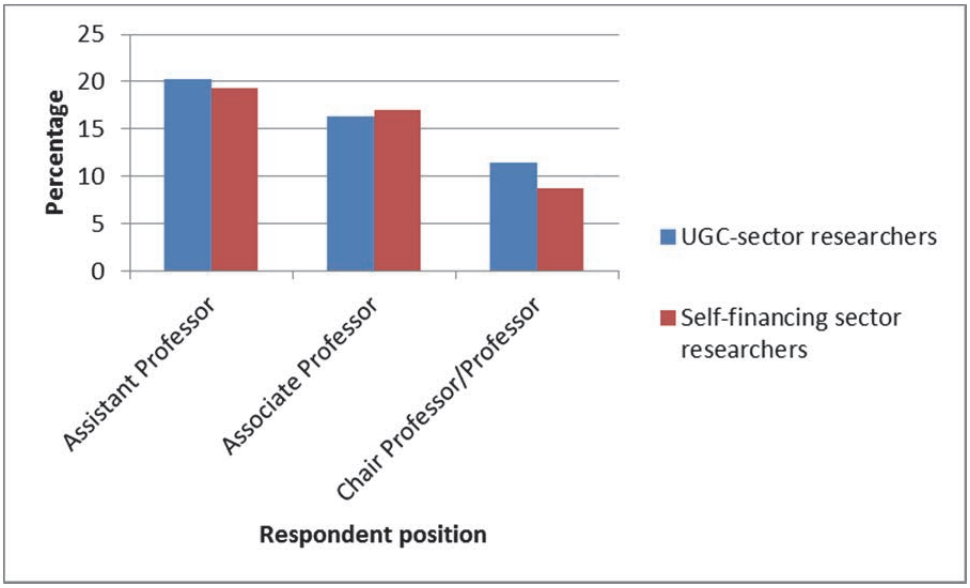
Figure 13: Panel members' opinions on whether the RGC grant application and review process is transparent



In the focus groups it was suggested by one participant (a researcher) that, due to a lack of experience with the system, junior members of staff may understand the system less than others. Survey responses appear

to back up this opinion as the percentage of responses across all questions that were 'don't know' was highest for assistant professors, and decreased with seniority/career experience of respondents (Figure 14).

Figure 14: Percentage of 'don't knows' across all questions for different career grades



5.2.3. Researchers are unclear on the review process undertaken to allocate funding through the RGC

Across all disciplines, researchers in our survey and focus groups questioned how many elements of the application and review process work, including:

- How proposals are matched
- What the appeal procedure is
- What the background of the reviewers is
- How panel members arrive at the final score
- How the rating and weighting works
- How/why does cutting of budgets happen
- How are panel members selected
- What should be received as feedback from the panel.

A small number of researchers in focus groups were concerned that reviewers and panel members do not always understand the aims and objectives of different schemes. This was particularly felt to be a problem in the self-financing sector when distinguishing the aims of IDS funding from those of the IIDS. Researchers felt that better guidance for reviewers is needed to improve the quality/utility of reviews. In addition, there was concern that international reviewers do not understand the Hong Kong scoring scale and system. In order to address this, researchers in focus groups and the survey suggested making the outcome and implications of scores and reviews much clearer to reviewers, for example changing subjective terms such as 'excellent' and 'good' to outcome-related terms such as 'definitely fund', 'fundable' etc. They argued that this would avoid ambiguity and reduce subjectivity between reviewers. In

response, some panel members stressed that this is their role in amalgamating scores and comments, taking into account the views of expert reviewers but having the final decision.

5.2.4. Myths exist in the system which affect which research ideas are put forward and the support requested on grants by researchers

Researchers and council members in focus groups had contradictory views on what funding secured from the RGC can be used for. For example, some researchers reported that they had been led to believe by colleagues and central administration within their HEIs that certain types of research and resources will not be funded, and said that this causes them to 'play it safe' and not ask for these things. However, panel members said that there is a 'one-line budget' so that in the majority of cases funding can be spent flexibly at the discretion of the researcher. In addition, a number of researchers reported a lack of consistency across universities regarding how money from each grant can be spent once it has been secured.

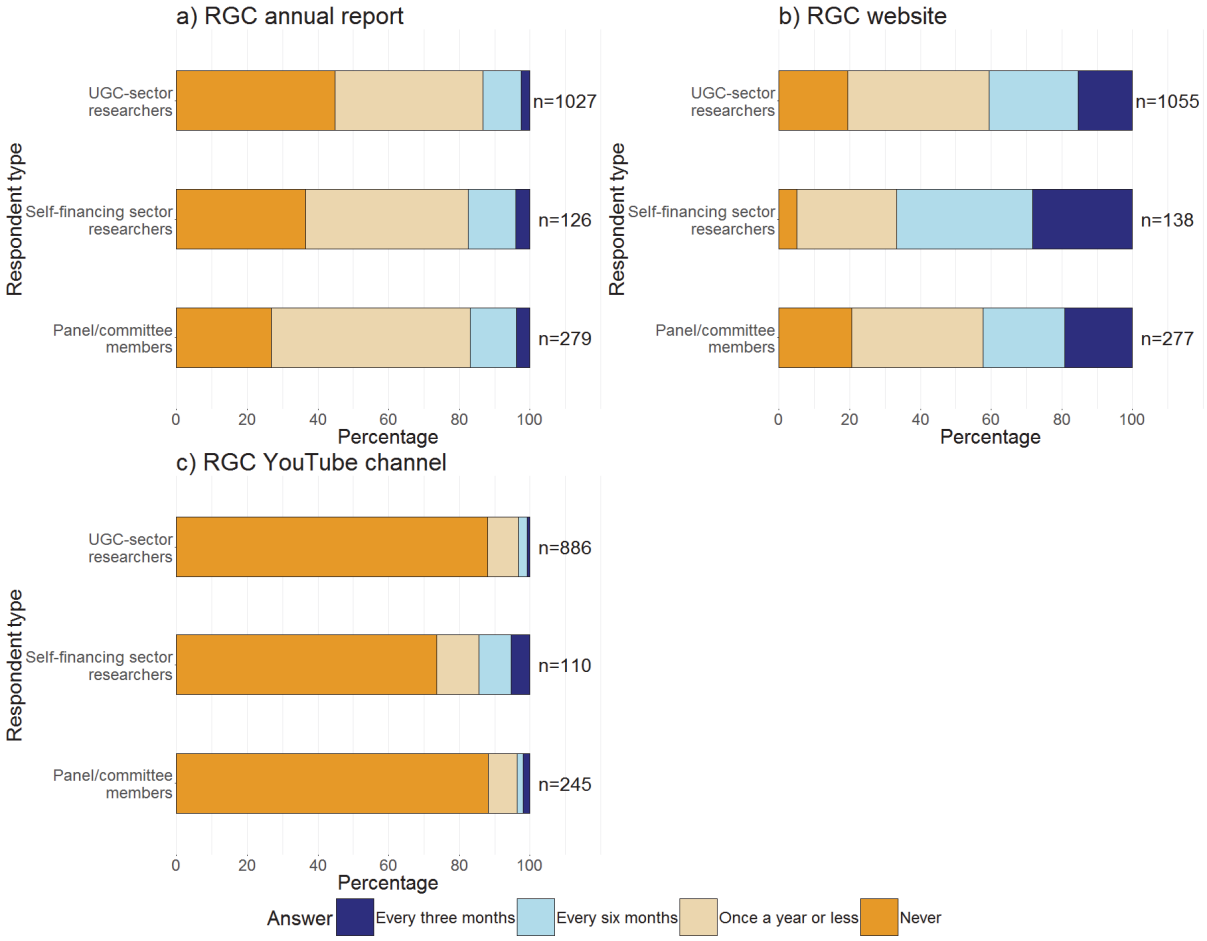
5.3. The mixed views on the transparency of the process and system could be improved through greater engagement

5.3.1. While there is some engagement between the RGC and the research community, further engagement is desired

The RGC undertakes a variety of engagement activities with the academic community through mechanisms including town hall meetings, its website and a YouTube channel. While the website and RGC annual report were reported as being used at least once a year by the majority of respondents, only 10–30 per cent of respondents use the RGC YouTube Chanel on an annual or more frequent basis (Figure 15).

The majority of researchers in focus groups felt that they have minimal engagement with the RGC and that only senior management can influence the RGC. Town hall meetings were viewed as useful by a number of panel members and some researchers, but few researchers at our focus groups were aware of this forum and had attended.

Figure 15: Survey respondents' frequency of use of RGC resources



5.3.2. There is a balance between transparency and level of burden on the RGC and the RGC Council/Panel members

Increasing transparency may also increase the burden on the RGC and RGC Council/Panel members. One particular area where many researchers in focus groups and in the survey want increased transparency is how scores are calculated. A few researchers would also like further justification from the panel to explain their score and why they did or did not receive funding. However, while some panel members felt additional feedback was justified, others queried whether it would improve the level of satisfaction of researchers or whether it would just lead to more work.

6. Concluding observations from the research findings

As discussed in the introduction to this report, the Hong Kong University Grants Committee has sought a macro-level review of their processes to understand the strengths of the existing system and areas for improvement. The independent evidence gathered in this report aims to inform the Task Force in their deliberations in regard to Phase 1 of their review.

Concluding comments from the RAND Europe authors are detailed below. In developing these comments, the authors looked across all the evidence collected during this evaluation, as well as combining it with other studies that RAND Europe has been involved in[64] and considering future assessment of research and funding allocation.

The RGC's strengths and achievements to date

The RGC is Hong Kong's primary research grant funder and has established a positive reputation over the past 25 years. In this time it has allocated HK$15.49bn. Through our focus groups and surveys there were many positive views articulated, by both local and international stakeholders, about what the RGC and associated funding has achieved. Many grant recipients also perceive the RGC as having facilitated their individual careers. Researchers and institutional managers were generally happy with the available mix and balance of research funding schemes, with researchers placing particular value on the fact that the majority of funding (80 per cent) provided by the RGC is response mode. As a result, we believe that the RGC should continue to provide a portfolio of funding and awards of varying amounts and durations, and for different career stages and disciplines. This will help to ensure both capacity building through schemes such as the ECS and GRF, and some strategic development through initiatives such as the TRS and AoE Scheme.

Concerns about the value of the funding available for competitive grants

Participants in our focus groups, as well as survey and consultation respondents, spanning all stakeholder groups (academics, universities and institutions, panel members and wider society), identified the overall value of the funding available as a source of concern. At 0.7 per cent, the percentage of GDP that is spent on research in Hong Kong is low compared to other countries, including others within the region – in Taiwan, Japan and South Korea over 2 per cent was spent in 2014. In addition, there has been no increase in the percentage of GDP spent on research in Hong Kong since 2005. For the value of funding to be

[64] See for example: Morgan Jones et al. (2013); Guthrie et al. (2015); Manville et al. (2015a); Manville et al. (2015b).

increased, the sector needs to justify this investment. Reviewing and articulating the broader societal impact of the research funded to date could support this case.

Linked to this issue is the lack of diversity of funding sources for academic research in Hong Kong. The RGC is the sole source of grant funding available for a large number of researchers in the system. For example, only 40 per cent of UGC-sector researchers who responded to the survey had funding from sources other than the UGC and their own institution. It may be beneficial to conduct a review of opportunities and incentives which would promote and increase both the amount of funding available and the diversity of funding sources available for research in Hong Kong, for example from industry and philanthropy.

Consequences of the system and its processes

Through our research we found a lack of agreement within the academic community as to whether the current value and duration of awards is correct. RGC grants are of lower value and shorter duration than many grants in comparator countries. Single investigator grants funded by the RGC have an average value of US$87,000 and an average duration of two to three years, compared to an average of US$118,000 for the same duration for grants distributed by the NSF.

Providing awards which are perceived to be of low value and short time frame was thought to have consequences for the research conducted. For example, it is thought to encourage researchers to conduct more theoretical and less experimental research, and attempt only incremental advances rather than transformational changes. In general, researchers are more concerned with the value of awards than the duration. However, while researchers would like grants to be both larger and longer, many only want this if the total funding available can also be increased. This may be partly linked to the lack of alternative funding sources and the resultant need for the high success rates.

Grant metrics are now used by the sector as a measure of success to reward both researchers and universities. GRF grants, won by individual academics, are one of a number of funding schemes used in the calculation of part of the research element of the UGC's block grant allocation.[65] This coupling is designed to incentivise competition and promote research excellence in the sector – an aim which it is achieving, according to a recent review of the R-portion allocation.[66] This was measured through increasing volumes of applications, improving research proposal quality and academics becoming more active in research participation. However, it is also important to consider the other behaviours that the coupling drives in the sector. For example, researchers felt that the use of GRF grants in the calculation of the block grant has led to GRF awards being used as a university metric in promotion and tenure at an individual level. Researchers felt this also led to increased pressure on staff and inefficiency in the funding system. There is also a risk that increasing the focus of researchers and institutions on receiving competitive grant funding from the RGC makes it less likely that other funders will develop new funding options.

[65] UGC. 2017a.

[66] Documents provided confidentially to RAND Europe by the UGC.

The Role of the RGC in strategic research directions

The RGC has a published mission and aims, but it does not have a published strategy. When asked whether the RGC and associated funding met the needs of researchers, it became apparent that the aims of the RGC and the goals of its funding are not well understood by the sector. In focus groups, researchers commented that they felt that only people at the very top of HEIs can engage with the RGC and input to its processes and strategy. To address this, the RGC should consider how it might enhance its engagement activities, with a view to supporting stakeholder involvement in its strategic direction and decision making.

The majority of the strategic decisions are devolved to the panels, and therefore it is possible for different panels to have different strategies. This recognises disciplinary differences but may lead to differences in processes which provide conflicting information. For example, there was a lack of consensus on whether all research (across disciplines and between types of schemes) is, or should be, assessed against the same quality threshold. In the focus groups, some participants reported that the required level of quality is the same irrespective of sector and scheme, whereas others felt different scales are applied depending on the aims and remit of the funding scheme. While criteria and thresholds do not need to be consistent, depending on the aims of the different elements of the RGC's funding portfolio it is important to acknowledge the merits on which different types of application are judged. The RGC should therefore consider whether the criteria and thresholds on which the quality of applications is assessed by different panels are appropriate and aligned with their strategic aims.

Through the review, participants identified a number of areas for future strategic consideration. These included encouraging genuine collaboration, measuring academic excellence for research serving different aims, and valuing broader societal impact. Due to the range of schemes available, it is important for the RGC to consider and articulate its position on a number of issues of global strategic relevance to ensure that the portfolio delivers the desired balance of factors. It is also important to understand the impact this has on the type of research funded and the benefits it can deliver.

Improvements to the review processes

Many researchers do not think the grant application and review process is transparent, while panel members (who were more familiar with the system and more involved) were much more positive about transparency. For example, researchers are unclear on the review process undertaken to allocate funding through the RGC, and this results in myths that affect which research ideas are put forward and the support researchers request in grants. While there is some engagement between the RGC and the research community, further engagement is desired. The RGC should therefore review and enhance its communication activities with the goal of improving understanding of RGC processes among all stakeholders. HEIs, for their part, should review internal processes to ensure that information from the RGC flows down and reaches all staff, while researchers should actively seek to gain awareness of RGC processes and provide input when given the opportunity.

When asked about specifics of the RGC's processes, some felt that they were overly burdensome and could be streamlined. To this end, respondents suggested increasing the number of applications per year, reducing the length of time it takes to hear the outcome of an application, shifting the timing of the grant

cycle in the academic calendar, and reducing the level of declaration required. The submission process and website were felt to be satisfactory, but could be made easier to use and more efficient. To address this, the RGC should review its processes and streamline them to maintain fairness and efficiency.

References

Access4.eu. 2017. 'The New Zealand Research landscape.' As of 4 May 2017: http://www.access4.eu/newzealand/683.php

Adams, Jonathan. 2010. 'Get ready for China's domination of science.' *New Scientist*, 6: 2742.

Agency for Science, Technology and Research. 2015. 'Annual Report Apr 2014 – Mar 2015.' As of 4 May 2017: https://www.a-star.edu.sg/Portals/0/media/yearbooks/ASTAR%20Annual%20Report.pdf

Agency for Science, Technology and Research. 2017. 'Overview.' As of 4 May 2017: https://www.a-star.edu.sg/About-A-STAR/Overview.aspx

Bazeley, Patricia and Kristi Jackson. 2013. 'Qualitative Data Analysis with NVivo (2nd ed.)' London: Sage.

Biotechnology and Biological Sciences Research Council. 2015. 'Guide to studentship eligibility.' As of 4 May 2017: http://www.bbsrc.ac.uk/documents/studentship-eligibility-pdf/

Biotechnology and Biological Sciences Research Council. 2017a. 'About us.' As of 4 May 2017: http://www.bbsrc.ac.uk/about/

Biotechnology and Biological Sciences Research Council. 2017b. 'Mission and history.' As of 4 May 2017: http://www.bbsrc.ac.uk/about/vision-mission-strategy/mission-history/

Biotechnology and Biological Sciences Research Council. 2017c. 'Application success rates.' As of 4 May 2017: http://www.bbsrc.ac.uk/funding/post-application/success-rates/

Biotechnology and Biological Sciences Research Council. 2017d. 'Governance and structure.' As of 4 May 2017: http://www.bbsrc.ac.uk/about/governance-structure/

Biotechnology and Biological Sciences Research Council. 2017e. 'Information for reviewers.' As of 4 May 2017: http://www.bbsrc.ac.uk/funding/reviewers/

Biotechnology and Biological Sciences Research Council. 2017f. 'BBSRC Guidance Notes for Reviewers Using the Je-S System.' As of 4 May 2017: http://www.bbsrc.ac.uk/documents/guidance-notes-for-reviewers-pdf/

Bothwell, Ellie. 2016. 'World University Rankings 2016-2017: results announced.' Times Higher Education, 21 September. As of 4 May 2017: https://www.timeshighereducation.com/news/world-university-rankings-2016-2017-results-announced

Comprehensive R Archive Network (homepage). 2017. As of 4 May 2017: https://cran.r-project.org/

Danish Agency for Science, Technology and Innovation. 2014. 'Evaluation of the Danish Council for Independent Research, Report of the Evaluation Panel.' Danish Agency for Science, Technology and Innovation.

Danish Council for Independent Research. 2016. Call for proposals: autumn 2016 and spring 2017.' As of 4 May 2017: http://ufm.dk/en/research-and-innovation/funding-programmes-for-research-and-innovation/calls/2016/files/DFF-call--autumn-2016-and-spring-2017.pdf

Department of Education and Training. 2017. 'Research Block Grants New Arrangements - Allocation Calculation Methodology.' Australian Government. As of 4 May 2017: https://www.education.gov.au/research-block-grants-new-arrangements-allocation-calculation-methodology

Economic and Social Research Council (2017). 'Research Grants (open call) FAQs.' As of 4 May 2017: http://www.esrc.ac.uk/files/funding/funding-opportunities/research-grants-faqs/

Embassy of Switzerland in China. 2014. 'Fact Sheet: National Natural Science Foundation of China.' As of 4 May 2017: http://www.swissnexchina.org/wp-content/uploads/sites/4/2014/07/Factsheet-NSFC.pdf

European Research Council. 2016. 'European Research Council (ERC) Frontier Research Grants. Information for Applicants to the Starting and Consolidator Grant 2017 Calls.' As of 4 May 2017: http://ec.europa.eu/research/participants/data/ref/h2020/other/guides_for_applicants/h2020-guide17-erc-stg-cog_en.pdf

European Research Council. 2017. 'Statistics.' As of 4 May 2017: https://erc.europa.eu/projects-figures/statistics

European Research Council. 2017b. 'Timeframe advanced grant 2016 evaluation (ERC-2016-ADG).' As of 4 May 2017: https://erc.europa.eu/timeframe-advanced-grant-2016-evaluation-erc-2016-adg

European Research Council. 2017c. 'Timeframe starting grant 2017 evaluation (ERC-2016-ADG).' As of 4 May 2017: https://erc.europa.eu/timeframe-starting-grant-2017-evaluation-erc-2017-stg

Fisher, Yaacov, and Michael Eilan. 2012. 'ERAWATCH Country Reports 2011: Israel. No. JRC77764.' Institute for Prospective and Technological Studies, Joint Research Centre.

Glennie, Alex, and Kirsten Bound. 2016. 'How innovation agencies work.' Nesta. As of 4 May 2017: http://www.nesta.org.uk/publications/how-innovation-agencies-work

Guthrie, Susan, Benoit Guerin, Helen Wu, Sharif Ismail and Steven Wooding. 2013. 'Alternatives to Peer Review in Research Project Funding: 2013 Update.' Santa Monica, CA: RAND Corporation. As of 4 May 2017: http://www.rand.org/pubs/research_reports/RR139.html

Guthrie, Susan, Teresa Bienkowska-Gibbs, Catriona Manville, Alexandra Pollitt, Anne Kirtley and Steven Wooding. 2015. 'The impact of the National Institute for Health Research Health Technology Assessment programme, 2003-13: a multimethod evaluation.' *Health Technology Assessment*, 19(67):1-291.

Guthrie Susan, Ioana Ghiga, and Steven Wooding. Forthcoming. 'What do we know about grant peer review in the health sciences?'

Innovative New Zealand. 2016. 'Endeavour Fund.' Ministry of Business, Innovation and Employment. As of 4 May 2017: http://www.mbie.govt.nz/info-services/science-innovation/innovative-new-zealand/budget-2016-funding/pdf-library/endeavour-fund.pdf

IPSOS. 2010. 'Weighting Online Surveys. Bite Sized Thought Piece.' Ipsos Media. As of 4 May 2017: https://www.ipsos-mori.com/DownloadPublication/1365_Ipsos%20MediaCT%20_Weighting%20Online%20Surveys_062010.pdf

Israel Science Foundation. 2016. 'Annual Report 2015/16.' Israel Science Foundation.

Israel Science Foundation. 2017a. 'ISF mission.' As of 4 May 2017: https://www.isf.org.il/#/isf-mission

Israel Science Foundation. 2017b. 'Organizational structure.' As of 4 May 2017: https://www.isf.org.il/#/organizational-structure

Israel Science Foundation. 2017c. 'Judging process.' As of 4 May 2017: https://www.isf.org.il/#/judging-process

Likert, Rensis. 1932. 'A Technique for the Measurement of Attitudes.' *Archives of Psychology*, 140: 1–55.

Manville, Catriona, Molly Morgan Jones, Marie-Louise Henham, Sophie Castle-Clarke, Michael Frearson, Salil Gunashekar and Jonathan Grant. 2015a. 'Evaluation of Submission Preparation for Impact Assessment REF 2014: Approach and evidence.' Santa Monica, CA: RAND Corporation. RR-7276-HEFCE. As of 4 May 2017: https://www.rand.org/content/dam/rand/pubs/research_reports/RR700/RR726/RAND_RR726.pdf

Manville, Catriona, Susan Guthrie, Marie-Louise Henham, Bryn Garrod, Sonia Sousa, Anne Kirtley, Sophie Castle-Clarke, and Tom Ling. 2015b. 'Assessing impact submissions for REF2014: An evaluation.' Santa Monica, CA: RAND Corporation (RR-1032-HEFCE). As of 4 May 2017: https://www.rand.org/content/dam/rand/pubs/research_reports/RR1000/RR1032/RAND_RR1032.pdf

McKinsey & Company. 2010. 'South Korea: Finding its place on the world stage.' As of 4 May 2017: http://www.mckinsey.com/global-themes/asia-pacific/south-korea-finding-its-place-on-the-world-stage

Ministry of Business, Innovation and Employment. 2016. 'How we invest.' As of 4 May 2017: http://www.mbie.govt.nz/info-services/science-innovation/investment-funding/how-we-invest

Ministry of Business, Innovation and Employment. 2017. 'Science Board.' As of 4 May 2017: http://www.mbie.govt.nz/info-services/science-innovation/investment-funding/science-board

Ministry of Science, Technology and Space. 2017. 'The National Infrastructures Program.' As of 4 May 2017: http://most.gov.il/english/research/Pages/default.aspx

Morgan Jones, Morgan, Sophie Castle-Clarke, Catriona Manville, Salil Gunashekar and Jonathan Grant. 2013. 'Assessing Research Impact: An International Review of the Excellence in Innovation for Australia Trial.' Santa Monica, CA: RAND Corporation. RR-278-ATN. As of 4 May 2017: http://www.rand.org/pubs/research_reports/RR278

National Institutes of Health. 2016. 'NIH Research Planning.' As of 4 May 2017: https://www.nih.gov/about-nih/nih-research-planning

National Institutes of Health. 2017. 'Office of the Director, NIH.' As of 4 May 2017: https://www.nih.gov/about-nih/what-we-do/nih-almanac/office-director-nih

National Natural Science Foundation of China. 2016a. 'Guide to Programmes.' As of 4 May 2017: http://www.nsfc.gov.cn/publish/portal1/tab285/

National Natural Science Foundation of China. 2016b. 'Fund for Less Developed Regions.' As of 4 May 2017: http://www.nsfc.gov.cn/Portals/0/fj/english/fj/pdf/2016/051.pdf

National Natural Science Foundation of China. 2017a. 'Main responsibilities.' As of 4 May 2017: http://www.nsfc.gov.cn/Portals/1/fj/pdf/02-01.pdf

National Natural Science Foundation of China. 2017b. 'NSFC's organization.' As of 4 May 2017: http://www.nsfc.gov.cn/Portals/1/fj/pdf/03-01.pdf

National Natural Science Foundation of China. 2017c. 'NSFC's evaluation system.' As of 4 May 2017: http://www.nsfc.gov.cn/Portals/1/fj/pdf/08-01.pdf

National Natural Science Foundation of China. 2017d. 'NSFC's supervision.' As of 4 May 2017: http://www.nsfc.gov.cn/Portals/1/fj/pdf/04-01.pdf

National Research Foundation. 2016a. 'Grant information.' As of 10 September 2016: http://www.nrf.re.kr/nrf_eng_cms/show.jsp?show_no=90&check_no=89&c_relation=0&c_relation2=0

National Research Foundation. 2016b. 'Overview.' As of 10 September 2016: http://www.nrf.re.kr/nrf_eng_cms/show.jsp?show_no=106&check_no=82&c_relation=0&c_relation2=0&c_now_tab=2

National Research Foundation. 2016c. 'Research types.' As of 10 September 2016: http://www.nrf.re.kr/nrf_eng_cms/show.jsp?show_no=100&check_no=99&c_relation=0&c_relation2=0

National Research Foundation. 2016d. 'Overview.' As of 10 September 2016: http://www.nrf.re.kr/nrf_eng_cms/show.jsp?show_no=85&check_no=82&c_relation=0&c_relation2=0

National Research Foundation. 2017a. 'Competitive Research Programme.' As of 4 May 2017: http://www.nrf.gov.sg/funding-grants#sthash.sfvueQPA.dpuf

National Research Foundation. 2017b. Research, Innovation and Enterprise Council (RIEC).' As of 4 May 2017: http://www.nrf.gov.sg/about-nrf/governance/research-innovation-and-enterprise-council-(riec)

National Research Foundation. 2017c. 'National Research Foundation (NRF) Board.' As of 4 May 2017: https://www.nrf.gov.sg/about-nrf/governance/national-research-foundation-(nrf)-board

National Research Foundation. 2017d. 'Competitive Research Programme.' As of 4 May 2017: http://www.nrf.gov.sg/about-nrf/programmes/competitive-research-programme

National Science Board. 2011. 'Federal Research Resources: A Process for Setting Priorities.' National Science Foundation.

National Science Foundation. 2013. 'Report to the National Science Board on the National Science Foundation's Merit Review Process Fiscal Year 2012.' National Science Foundation.

National Science Foundation. 2014. 'Strategic Plan for 2014 – 2018.' National Science Foundation. As of 4 May 2017: https://www.nsf.gov/pubs/2014/nsf14043/nsf14043.pdf

National Science Foundation. 2015. 'Report to the National Science Board on the National Science Foundation's Merit Review Process, Fiscal Years 2015.' National Science Foundation.

National Science Foundation. 2016. 'Graduate Research Fellowship Program (GRFP): Program Solicitation.' As of 4 May 2017: https://www.nsf.gov/pubs/2016/nsf16588/nsf16588.pdf

National Science Foundation (homepage). 2017a. As of 4 May 2017: http://www.nsf.gov/nsb/about/

National Science Foundation. 2017b. 'Conflicts of Interest.' As of 4 May 2017: https://www.nsf.gov/policies/conflicts.jsp

National Science Foundation. 2017c. 'Office of Inspector General.' As of 4 May 2017: https://www.nsf.gov/oig/

OECD. 2012. 'OECD Science, Technology and Industry Outlook 2012.' Paris: OECD Publishing.

OECD. 2014. 'Main Science and Technology Indicators, Issue 1.' Paris: OECD Publishing.

Reid, Ian R, Peter Joyce, John Fraser and Peter Crampton. 2014. 'Government funding of health research in New Zealand.' *New Zealand Medical Journal*, 127(1389).

SelectSurvey (homepage). 2017. As of 4 May 2017: http://selectsurvey.net/

TopUniversities. 2017. 'QS World University Rankings 2017.' As of 4 May 2017: https://www.topuniversities.com/university-rankings

Tsui, Lap-Chee, Rita Lun and Edwin Cheung. 2015. 'The Ecosystem of Innovation and Technology in Hong Kong.' Our Hong Kong Foundation. As of 4 May 2017: http://ourhkfoundation.org.hk/sites/default/files/media/pdf/ScTech_full_report_eng.pdf

UGC. 2015. 'UGC Annual Report 2014-15. Hong Kong: UGC. As of 4 May 2017: http://www.ugc.edu.hk/eng/ugc/about/publications/report/AnnualRpt_2014-15.html

UGC. 2017a. 'What is the current funding arrangement for the Research Portion of the Block Grant?' As of 5 May 2017: http://www.ugc.hk/eng/ugc/faq/q303c.html

UGC. 2017b. 'What is the Research Endowment Fund (REF)? How does the Fund work?' As of 5 May 2017: http://www.ugc.edu.hk/eng/ugc/faq/q307.html

UGC. 2017c. 'Funding Sources.' As of 5 May 2017: http://www.ugc.edu.hk/eng/rgc/about/funding/sources.html

UGC. 2017d. 'Research Grants Council (RGC) Terms of Reference.' As of 5 May 2017: http://www.ugc.edu.hk/eng/rgc/about/term_rgc.html

Um, Mi-Jung. 2017. 'Centre of Excellence as a tool for capacity building, case study: Korea.' OECD Programme on Innovation, Higher Education and Research for Development, IHERD. As of 4 May 2017: http://www.oecd.org/sti/Korea_case_study.pdf

White House Office of Science and Technology Policy. 2014. 'R&D in the 2015 Budget (revised).' As of 4 May 2017: https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/fy2015rdtables.pdf

Wooding, S, Hanney, SR, Buxton, MJ, and Grant, J, (2004). The returns from arthritis research: approach, analysis and recommendations. Volume 1, Cambridge, UK: RAND Europe, http://www.rand.org/pubs/monographs/MG251/

World Bank (2017). 'Research and development expenditure (% of GDP).' As of 4 May 2017: http://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS

Annex A Background and context

In order to better understand the Research Grants Council (RGC) we reviewed a series of public and private documents describing its funding schemes, structures and processes. To place this into context we also compared the RGC's funding schemes and processes against eight comparator countries. Comparator countries were chosen based on international significance to Hong Kong or similarity to Hong Kong.

In this annex we first describe our approach to the document review, including choice of country and funding body within each country, and the documents reviewed. We then describe the research funding landscape in Hong Kong and the role of the RGC in this system, and then describe the RGC's structures, processes and funding schemes, contrasting them against the eight comparator countries.

A.1. Approach

A.1.1. Country and funding body selection

A multi-stage process was used to identify comparator countries. Firstly we compiled a list of potential countries of interest. Countries were included in the list based on specialist knowledge of the project team and whether they were mentioned in international comparisons in reports by either the University Grants Committee (UGC) or the Our Hong Kong Foundation. We then compiled a broad selection of indicators for each of these countries which give an indication of 'international equivalence'.[67] We considered: R&D expenditure, both of the country and of the government (Table 9); general country similarity in terms of overall GDP, population and land area (Table 10); education and development similarity in terms of development indices and education levels (Table 11); and research similarity in terms of number of researchers, number of institutions and research rankings (Table 12). We then compared the countries to find those that are most similar in these different areas.

[67] The indicators collected were: figures on Research and Development (R&D) expenditure, economic indicators such as Gross Domestic Product (GDP), country size in terms of land area and population, development indicators such as the Human Development Index (HDI) or Gini coefficient, and Times Higher Education (THE) university ranking indicators, which give a very rough representation of the international success of higher education institutions in each country.

Table 9: R&D expenditure of Hong Kong and other potential comparator countries

Country	R&D expenditure as percentage of GDP	R&D expenditure in current USD (bn)	Public R&D expenditure as a percentage of total R&D expenditure	Public R&D expenditure as a percentage of GDP	Public R&D expenditure in current USD
Hong Kong	0.73%	2.26	56%	0.41%	1.26
Australia	2.25%	30.14	35%	0.78%	10.43
Canada	1.62%	25.15	44%	0.71%	10.99
China	2.01%	218.42	21%	0.42%	46.09
Denmark	3.06%	9.03	29%	0.90%	2.65
Finland	3.31%	7.61	26%	0.87%	1.99
France	2.23%	54.00	36%	0.81%	19.55
Germany	2.85%	95.64	29%	0.83%	27.93
Greece	0.80%	1.56	55%	0.44%	0.86
Iceland	2.49%	0.41	41%	1.03%	0.17
India	0.82%	17.00	NA	NA	NA
Ireland	1.58%	3.76	28%	0.44%	1.05
Israel	4.21%	12.46	14%	0.59%	1.73
Japan	3.47%	143.08	23%	0.81%	33.19
Luxembourg	1.16%	0.67	31%	0.36%	0.21
Malaysia	1.13%	3.35	32%	0.36%	1.08
Netherlands	1.98%	14.90	35%	0.69%	5.17
New Zealand	1.25%	2.17	51%	0.64%	1.10
Norway	1.66%	6.45	46%	0.77%	2.98
Oman	0.17%	0.12	73%	0.12%	0.09
Qatar	0.47%	0.78	68%	0.32%	0.53
Singapore	2.00%	5.85	41%	0.81%	2.38
South Korea	4.15%	57.18	39%	1.63%	22.42
Sweden	3.30%	16.26	29%	0.96%	4.75
Switzerland	2.96%	19.68	27%	0.79%	5.23
Taiwan	3.00%	15.71	NA	NA	NA
Thailand	0.39%	1.54	44%	0.17%	0.68
Turkey	0.94%	6.75	47%	0.44%	3.17
UK	1.63%	46.43	28%	0.46%	13.05
USA	2.81%	504.31	34%	0.95%	170.46

Table 10: GDP, population and land area of Hong Kong and other potential comparator countries

Country	GDP in current USD (bn)	GDP per capita PPP in current USD	Population	Land area in km^2
Hong Kong	310	56,720	7,305,700	1,050
Australia	1,340	45,514	23,781,169	7,682,300
Canada	1,553	44,310	35,851,774	9,093,510
China	10,866	14,239	1,371,220,000	9,388,211
Denmark	295	46,635	5,676,002	42,430
Finland	230	40,601	5,482,013	303,890
France	2,422	39,678	66,808,385	547,557
Germany	3,356	47,268	81,413,145	348,540
Greece	195	26,680	10,823,732	128,900
Iceland	17	46,547	330,823	100,250
India	2,074	6,089	1,311,050,527	2,973,190
Ireland	238	54,654	4,640,703	68,890
Israel	296	35,432	8,380,400	21,640
Japan	4,123	37,322	126,958,472	364,560
Luxembourg	58	101,926	569,676	2,590
Malaysia	296	26,891	30,331,007	328,550
Netherlands	753	48,459	16,936,520	33,670
New Zealand	174	36,982	4,595,700	263,310
Norway	388	61,472	5,195,921	365,245
Oman	70	39,234	4,490,541	309,500
Qatar	167	143,788	2,235,355	11,610
Singapore	293	85,209	5,535,002	707
South Korea	1,378	34,549	50,617,045	97,466
Sweden	493	46,420	9,798,871	407,340
Switzerland	665	60,535	8,286,976	39,516
Taiwan	524	46,800	23,415,126	32,260
Thailand	395	16,306	67,959,359	510,890
Turkey	718	19,618	78,665,930	769,630
UK	2,849	41,325	65,138,232	241,930
USA	17,947	55,837	321,418,820	9,147,420

Table 11: Development and education levels of Hong Kong and other potential comparator countries

Country	Human Development Index[68]	Gini coefficient[69]	Enrolment in tertiary education (gross enrolment ratio, both sexes)	PISA ranking[70]	Government expenditure on education as percentage of GDP
Hong Kong	0.910	53.7	69%	3	3.6%
Australia	0.935	30.3	87%	19	4.9%
Canada	0.913	32.1	59%	13	5.3%
China	0.727	46.9	39%	1	1.9%
Denmark	0.923	24.8	82%	22	8.5%
Finland	0.883	26.8	89%	12	7.2%
France	0.888	30.1	64%	25	5.5%
Germany	0.916	27.0	65%	16	4.9%
Greece	0.865	36.7	110%	42	4.0%
Iceland	0.899	28.0	82%	27	7.0%
India	0.609	33.6	24%	NA	3.8%
Ireland	0.916	33.9	73%	20	5.8%
Israel	0.894	42.8	66%	41	5.6%
Japan	0.891	37.9	62%	7	3.8%
Luxembourg	0.892	30.4	19%	29	3.6%
Malaysia	0.779	46.2	30%	52	6.3%
Netherlands	0.922	25.1	79%	10	5.5%
New Zealand	0.913	36.2	81%	23	7.3%
Norway	0.944	26.8	77%	30	7.4%
Oman	0.793	NA	29%	NA	4.2%
Qatar	0.850	41.1	16%	63	3.5%
Singapore	0.912	46.4	NA	2	2.9%
South Korea	0.898	30.2	95%	5	4.6%
Sweden	0.907	24.9	62%	38	7.7%
Switzerland	0.930	28.7	57%	9	5.0%

[68] HDI is a composite statistic of life expectancy, education, and per capita income indicators.

[69] The Gini coefficient is a measure of statistical dispersion intended to represent the income or wealth distribution of a nation's residents; it is generally used to measure level of inequality.

[70] Ranking on student performance in mathematics, reading and science.

Country	Human Development Index[68]	Gini coefficient[69]	Enrolment in tertiary education (gross enrolment ratio, both sexes)	PISA ranking[70]	Government expenditure on education as percentage of GDP
Taiwan	0.882	33.6	NA	4	NA
Thailand	0.726	48.4	52.51%	50	4.9%
Turkey	0.761	40.2	78.98%	44	2.9%
UK	0.907	32.4	56.48%	26	5.7%
USA	0.915	45.0	86.66%	36	5.2%

Table 12: Number of researchers and research rankings for Hong Kong and other potential comparator countries

Country	Researchers in R&D per million population	Number of institutions in THE world rankings	Rank of top institution in THE rankings
Hong Kong	2,990	6	44
Australia	4,335	31	33
Canada	4,490	25	19
China	1,036	37	42
Denmark	7,311	6	82
Finland	7,188	9	76
France	4,154	27	54
Germany	4,472	37	29
Greece	2,628	7	351
Iceland	7,035	1	201
India	157	17	251
Ireland	3,370	9	160
Israel	8,282	6	178
Japan	5,201	41	43
Luxembourg	4,800	1	193
Malaysia	1,794	5	401
Netherlands	4,303	13	47
New Zealand	3,701	7	172
Norway	5,576	4	135
Oman	127	5	501
Qatar	597	1	601
Singapore	6,442	2	26
South Korea	6,457	24	85
Sweden	6,473	11	28
Switzerland	4,481	10	9
Taiwan	7,650	24	167
Thailand	544	7	501
Turkey	1,169	11	251
UK	4,055	78	2
USA	4,019	147	1

Following the comparative analysis, our initial list of countries included Greece, Ireland, Singapore, Denmark, Israel, Malaysia, New Zealand and Qatar. In addition, we proposed countries which are not necessarily similar but have particular relevance to Hong Kong: China, the United Kingdom (UK) and the United States (US). As similarity of funding systems cannot necessarily be measured quantitatively, we discussed the list of countries with the commissioning team at the University Grants Committee and the Task Force to gain their expert knowledge and views, and refined the list accordingly. The final list of countries was: the UK, the US and China as internationally significant examples for Hong Kong; South Korea, Singapore, New Zealand, Israel and Denmark as countries with similar characteristics (based on the indicators) to Hong Kong. South Korea and Singapore are of specific interest for Hong Kong as examples within the same region.

In order to be able to cover this range of countries within the scope and timeframe of the study, one major funding body was selected in each country, based on the following criteria:

- Size of the funding body (in terms of funding granted every year)
- International reputation
- Publicly funded status of the organisation
- Size and nature of research programme portfolio.

While these funding bodies were the focus of our data collection efforts, we also included information on other funding bodies in our sample of countries where the project team had prior knowledge and experience.

Reasons for selection of countries and funding bodies

United Kingdom

The historical link between the UK and Hong Kong and the similar set-up of their research systems make the UK an interesting comparator country. Within the UK there are currently seven discipline-specific funding bodies under the public funding umbrella organisation Research Councils UK (RCUK).[71] For the purposes of this study, we chose the Biotechnology and Biological Sciences Research Council (BBSRC) as the comparator funding body[72] as it is the largest public funding body for non-medical bioscience and invested £473m in bioscience research and infrastructure in 2015–16.[73]

United States

The United States (US) is generally considered to be a strong international example of a research funding system.[74] In addition, many of the researchers in Hong Kong were trained in the US system or have worked there during their careers, and therefore view the US system as an important comparator. Within

[71] This system is under rearrangement at the time of writing this report and the seven UK Research Councils will be gathered under UK Research and Innovation (UKRI).
[72] Originally, due to data availability, the Medical Research Council was used, but following discussion with the Task Force this was switched to the BBSRC.
[73] Biotechnology and Biological Sciences Research Council (2017a).
[74] OECD (2012).

the US there are a wide variety of public funding bodies. We chose the National Science Foundation (NSF) as the comparator funding body as it is a major research funding organisation in the US[75] and it provides funding for public research in all fields of fundamental science and engineering, except for biomedical sciences (as this is covered by the National Institutes of Health (NIH)). While we did not specifically collect data on the NIH for this study, we also considered it through background knowledge within the project team.

China

China is of political and economic importance to Hong Kong and engagement with China is listed as an explicit goal for UGC-funded universities in the UGC Annual Report for 2014–2015.[76] Additionally, the intensity of Chinese research has increased rapidly over recent decades, outperforming that of the European Union (EU) in 2013, with Chinese R&D expenditures equivalent to 2.08 per cent of GDP compared to 2.03 per cent for the EU.[77] The quality of research has also increased, demonstrated by a steady increase in both citation impact and the number of patents.[78] We chose the National Natural Science Foundation of China (NSFC) as the comparator funding body as it is the largest Chinese research funding agency for basic research and application-oriented research in the natural sciences.[79] The NSFC also co-funds researchers with the RGC through the NSFC/RGC Joint Research Scheme (JRS).

South Korea

South Korea is an important political and economic partner for Hong Kong and is also frequently mentioned in Hong Kong's official documents. In addition, South Korea has strong economic and political influence in the Asia-Pacific region as one of the four Asian Tigers, and it has achieved outstanding economic growth over the last five decades due to its strategic R&D investments – the country spends a larger percentage of its GDP on R&D than Germany, the UK, or the US.[80] We chose the National Research Foundation (NRF) as the comparator funding body as it is the main public organisation financing research covering a wide range of disciplines, including science, engineering, humanities, social sciences and interdisciplinary studies.[81]

Singapore

Singapore is an interesting comparator due to the historical, commercial and political links between Singapore and Hong Kong as former British territories and Asian Tigers, as well as their similarities in terms of geography, population, economy, and development indicators. Singapore is also frequently mentioned in international comparisons by the Our Hong Kong Foundation,[82] the UGC[83] and Times Higher Education.[84] We chose the National Research Foundation (NRF) as the comparator funding body

[75] It is the fifth largest funder in the US. See White House Office of Science and Technology Policy (2014).
[76] UGC (2015, 31).
[77] OECD (2014).
[78] Adams (2010).
[79] Embassy of Switzerland in China (2014).
[80] McKinsey & Company (2010).
[81] Um (N.d.).
[82] Tsui et al. (2015).
[83] University Grants Committee (2015).
[84] Bothwell (2016).

as it is the main governmental organisation providing funding on a competitive basis to universities, coordinating the different national research agencies and setting the national direction for R&D.[85] We also considered the Agency for Science, Technology and Research (A*STAR) for this study as the project team had prior knowledge and experience in A*STAR's field, and it is one of the largest public research funders in Singapore in the field of biomedical sciences, physical sciences and engineering.

New Zealand

New Zealand shares similarities with Hong Kong in terms of R&D indicators, population size and HDI. We chose the Ministry of Business, Innovation and Employment (MBIE) as the comparator funding body as it is the government's lead agency in charge of research, science and technology investments across a wide range of research areas, including biological industries, energy and minerals, hazards and infrastructure, environment, health and society, and high-value manufacturing and services.[86]

Israel

Israel is similar to Hong Kong in terms of its geographical size, population and GDP, but has significantly higher R&D spending (as a percentage of its GDP) compared to other OECD countries, including Hong Kong. It also has an international reputation for the funding of innovation. We chose the Israel Science Foundation (ISF) as the comparator funding body as it is Israel's predominant source of competitive grant funding for basic research.[87]

Denmark

Denmark is similar to Hong Kong in terms of GDP, land area and population. It has a high level of public R&D spending compared to other OECD countries and Hong Kong, and a strong research and innovation position at the international level. We chose the Danish Council for Independent Research (DFF) as the comparator funding body as it is the largest funder of basic research in Denmark.[88]

A.1.2. Document selection

RGC Documents

The UGC provided us with documents covering the structure and processes of the RGC and the current RGC funding schemes. For each funding scheme this included objectives and support provided to researchers, membership of assessment panels, guidance to panels and reviewers, and data on applicants to all schemes from 2011–2015 (where applicable). In addition, the UGC provided us with documents covering the context of the Hong Kong system, including the make-up of higher education institutions (HEIs) in Hong Kong, and details on other government funding schemes in Hong Kong.

We also conducted two key informant interviews with the chairmen of the RGC, both current and past, to provide context and perspectives.

[85] National Research Foundation (2017a).
[86] Access4.eu (N.d.)
[87] Fisher and Eilan (2012).
[88] Danish Agency for Science, Technology and Innovation (2014).

Country documents

We have used publicly available documents to determine the processes of each funding body. These documents were almost all found on the funding body website. If data is not available publicly then we have not been able to collect it. Given the time limits of this review it has not been possible to cover all features of all countries, therefore for each country we have focused on the variables that are of particular relevance. Funding bodies mentioned in each theme are chosen based on availability of data, interesting/relevant processes, and the decision to cover both internationally significant and similar countries. We do not describe the processes of funding bodies from all countries for all themes, in large part because there is very little relevant published material and additional interviews were not possible within the remit of this work. Where we already had information of interest on other funding bodies, that information was also included.

A.2. Results

A.2.1. Overview of the Hong Kong research system

Hong Kong has eight publicly funded universities, funded by the UGC, and 13 local self-financing (SF) degree-awarding institutions (Table 13). It performs well in international rankings of research, with 5 of the top 8 UGC-funded universities in the top 200 in the QS University Ranking, and 2 in the top 50.[89]

[89] TopUniversities (2017).

Table 13: Higher education institutions in Hong Kong by sector

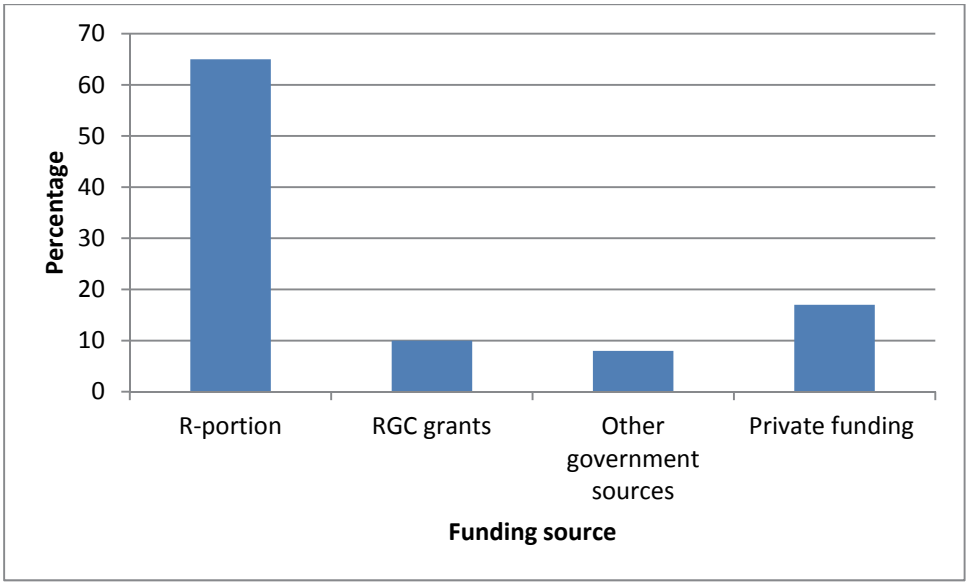
Sector	Name
UGC	The University of Hong Kong (HKU)
UGC	The Chinese University of Hong Kong (CUHK)
UGC	The Hong Kong University of Science and Technology (HKUST)
UGC	City University of Hong Kong (CityU)
UGC	The Hong Kong Polytechnic University (PolyU)
UGC	Hong Kong Baptist University (HKBU)
UGC	Lingnan University (LU)
UGC	The Education University of Hong Kong (EdUHK)
Self-financing	Caritas Institute of Higher Education
Self-financing	Centennial College
Self-financing	Chu Hai College of Higher Education
Self-financing	Gratia Christian College
Self-financing	Hang Seng Management College
Self-financing	HKCT Institute of Higher Education
Self-financing	Hong Kong Nang Yan College of Higher Education
Self-financing	Hong Kong Shue Yan University
Self-financing	School of Continuing Education, Hong Kong Baptist University
Self-financing	School of Professional Education and Executive Development, The Hong Kong Polytechnic University
Self-financing	Technological and Higher Education Institute (THEi) of Hong Kong
Self-financing	The Open University of Hong Kong
Self-financing	Tung Wah College

UGC-funded universities

The eight publicly funded universities in Hong Kong are funded primarily by the UGC and the RGC. The UGC is a non-statutory advisory committee which is also responsible for advising the Hong Kong government on the needs of higher education institutions in Hong Kong, including both research and education. The RGC is an advisory board to the UGC on research matters which is responsible for the provision of competitive earmarked research grants. The bulk of the government funding is distributed by the UGC through a block grant covering both teaching and research activities; 23 per cent of this block

grant is allocated for research (the Research, or R-portion).[90] The R-portion corresponds to 65 per cent of the research funding for UGC-funded universities, and can be used to cover a variety of costs including salaries, infrastructure such as buildings and equipment, and other overhead costs. The rest of the research funding comes from: competitive grants managed by the RGC (10 per cent); other government sources (8 per cent); and private funding (17 per cent) (Figure 16). Although these figures indicate a diversity of sources for research funding, as later sections of this report will demonstrate, the RGC is widely perceived within academic institutions as the primary grant funder of research.

Figure 16: Source and percentage of funding for research at UGC-funded universities[91]



In Hong Kong, similar to in the UK, a Research Assessment Exercise (RAE) is run at an interval of about six years, and is then used to determine the amount of funding each university gets as the R-portion of the block grant over the next triennia. The allocation of the R-portion of the block grant to each university was initially based entirely on the results of the RAE. However, from 2012/13 onwards, in a move designed to increase competiveness, a decision was made to reduce the proportion of the money awarded based on the results of the RAE, and instead distribute some of the money based on each university's success in gaining RGC Earmarked Research Grants (this is similar to Australia).[92] This magnifies the importance and significance of RGC funding within the ecosystem. By 2020/21, 50 per cent of the money in the R-portion of the block grant will be distributed based on the RAE, and 50 per cent will be distributed based on success in RGC Earmarked Research Grants.[93]

[90] While this money is allocated for research, there is no requirement placed on the universities for it to be spent entirely on research and not on other activities such as teaching. Equally there is no requirement that other money from the block grant is not spent on research.

[91] Note that the R-portion is allocated to universities to use as they wish, and is often used to pay for infrastructure and overhead costs.

[92] Department of Education and Training (2017).

[93] UGC. 2017a.

Of the competitive funding from government, more than half is distributed by the RGC. The majority of this funding (80 per cent) is response mode funding, with no set area and with full autonomy given to academics to set the research agenda. Even with regard to large collaborative calls such as the Areas of Excellence (AoE) Scheme (see Table 14), the majority of funding is designed to be curiosity-led rather than shaped by strategic aims. The amount of funding distributed is based on interest earned on the Research Endowment Fund, a government endowment established in 2009 in order to provide continuous research funding to the UGC sector.[94] This has the benefit of providing a relatively stable stream of income for research but also constrains the available resources.

A number of other government departments provide competitive research funding, with these calls for funding tending to be more targeted. The largest of these are:

- The Innovation & Technology fund (ITF), administered by the Innovation and Technology Commission (ITC), which aims to support midstream/downstream R&D, foster an innovation and technology culture, and increase industry-university collaboration;
- The Health and Medical Research Fund, administered by the Research Council and under the purview of the Research Office of the Food and Health Bureau, which supports advanced medical research;
- The Environment and Conservation Fund, a fund established under the Environment and Conservation Fund Ordinance and overseen by The Environment and Conservation Fund Committee (ECFC), which provides funding for educational, research and other projects and activities in relation to environmental and conservation matters.
- The Quality Education Fund, administered by the Quality Education Fund Steering Committee under the Education Commission and supported by the Education Bureau, which funds non-profit making initiatives focused on basic education (i.e. kindergarten, primary, secondary and special education).

Seventeen per cent of research funding at UGC-funded universities comes from private sources.

Self-financing degree-awarding institutions

Self-financing degree-awarding institutions are financed in large part through their teaching activities. They tend to be more teaching-focused institutions, and the majority of them are also newer and still establishing themselves. Until 2014 they did not have any access to UGC or RGC funds; however, in January 2012 the Government injected HK$3bn into the Research Endowment. This provides competitive research funding for the local self-financing degree sector to enhance academic and research development.[95] The funding is administered by the RGC.

[94] UGC. 2017b.

[95] UGC. 2017c.

A.2.2. Aims and mission of funding bodies

RGC

The objective of RGC research funding is to build up research capability in Hong Kong. The terms of reference of the RGC are:[96]

- To advise the Special Administrative Region (SAR) government, through the UGC, on the needs of the institutions of higher education in Hong Kong in the field of academic research, including the identification of priority areas, in order that a research base adequate for the maintenance of academic vigour and pertinent to the needs of Hong Kong may be developed; and
- To invite and receive, through the institutions of higher education, applications for research grants from academic staff and for the award of studentships and post-doctoral fellowships; to approve awards and other disbursements from funds made available by the SAR government through the UGC for research; to monitor the implementation of such grants and to report at least annually to the SAR government through the UGC.

The RGC therefore combines both an advisory role to the government and the implementation of research priorities.

International comparator countries

Across our eight comparator countries, the following funding organisations also combine the roles of providing funding and providing an advisory role to the government:

- The **DFF (Denmark)** fulfils two roles by awarding grants and providing advice on research.[97]
- The **NRF (South Korea)** awards grants, and aims to be responsive to opinions from the field and to provide an advisory role for national research support.[98]
- The **NSFC (China)** aims to implement government policies and provides consultations for major issues in the development of science and technology in the country.[99]
- The **MBIE (New Zealand)** awards grants and advises the government on New Zealand's science and innovation system.[100]
- The **NSF (US)** defines and establishes its policies in accordance with national policies set forth by the President and the Congress; the board also serves as an independent body of advisors to both the President and the Congress on policy matters related to science and engineering.[101]

Meanwhile, these other funding organisations are focused on providing funding:

- The role of the **NRF (Singapore)** is to implement the national R&D priorities set by the Research Innovation and Enterprise Council (chaired by the Prime Minister of Singapore) via policies, plans and strategies for research, innovation and enterprise.[102]

[96] UGC. 2017d.
[97] Danish Agency for Science, Technology and Innovation (2014).
[98] Personal communication (2016).
[99] National Natural Science Foundation of China (2017a).
[100] Access4.eu (N.d.)
[101] National Science Foundation (2017a).

- The mission of the **ISF (Israel)** is 'to support and promote Israeli basic research through a "bottom-up" approach initiated by talented, curiosity-driven individuals, and to nurture entrepreneurship among the scientific research community'.[103]
- The role of the **BBSRC (UK)** is to distribute public funds for research.[104]

Unlike the RGC, some organisations have a specific applied research focus:

- **A*STAR (Singapore)** has an explicit mission to bridge the gap between academia and industry and to drive mission-oriented research that advances scientific discovery and technological innovation.[105]
- The **NRF (South Korea)** specifically aims at 'creating high value-added products across the nation by developing creative forms of future knowledge and technology through multidisciplinary convergence'.[106]
- The **MBIE (New Zealand)** oversees science and innovation investment and supports infrastructure aiming to foster commercialisation, enhance productivity and achieve wider benefits for New Zealand through the application of research results.[107]

Some funding bodies aim specifically at pushing the frontier of science:

- The **NRF (South Korea)** aims to establish an infrastructure and create an environment to facilitate the creation of breakthrough knowledge.[108]
- **A*STAR (Singapore)** aims to push the frontiers of science and engage in world-class research that will benefit the Singapore economy and society at large.[109]
- The **NSF (US)** specifically aims to 'transform the frontiers of science and engineering'.[110]

Some funding bodies also aim to achieve economic and societal impacts:

- **A*STAR (Singapore)** aims to create economic growth and jobs for Singapore, and enhance lives by contributing to societal benefits such as improving outcomes in healthcare, urban living and sustainability.[111]
- The **NSF (US)** aims to stimulate innovation and address societal needs through research and education.[112]
- The **MBIE's Endeavour Fund (NZ)** supports research, science, technology or related activities that have high potential to positively transform New Zealand's future economic performance, improve the sustainability and integrity of the environment, and help strengthen society, especially Māori communities.[113]

---

[102] National Research Foundation (2017b).
[103] Israel Science Foundation (2017a).
[104] Biotechnology and Biological Sciences Research Council (2017b).
[105] Agency for Science, Technology and Research (2015).
[106] National Research Foundation (2016b).
[107] Ministry of Business, Innovation and Employment (2016).
[108] National Research Foundation (2016b).
[109] Agency for Science, Technology and Research (2015).
[110] National Science Foundation (2014).
[111] Agency for Science, Technology and Research (2017).
[112] National Science Foundation (2014).
[113] Innovative New Zealand. 2017.

- The aims of the **BBSRC (UK)** include advancing and disseminating knowledge and technology to improve the quality of life and economic competitiveness of the UK.[114]

A.2.3. Priority setting

RGC

Priorities of RGC funding, and hence its funding schemes, are set partly by the government and partly by the RGC. Of the money distributed by the RGC, a portion is pre-designated by the SAR government for specific schemes. The RGC divides the rest of the budget between the remaining schemes. Schemes are reviewed on a regular basis.

International comparator countries

Priority setting is generally not documented in public documents; therefore it is difficult to provide detailed information on international examples. Generally, strategic research priorities are set up following a top-down or bottom-up approach or a combination of both, depending on the organisation. These approaches are outlined below.

Top-down approach

- **The Ministry of Science, Technology and Space (Israel)** has priorities chosen by an expert panel headed by the Chief Scientist of the Ministry.[115]
- The **NIH (US)** is critically reliant on political priorities and federal funding cycles and has therefore little autonomy to decide its research priorities.[116]

Combination of top-down and bottom-up

- **The NSF (US)** has adopted a bottom-up approach by maintaining constant contact with the research community to identify priority research areas; however, the National Science Board (NSB) is in charge of setting research priorities at the organisational level.[117]
- The **NRF (South Korea)** contributes to priority setting at the governmental level by linking the research community with the Ministry of Science, ICT and Future Planning.[118]

Bottom-up approach

- The Defense Advanced Research Projects Agency **(DARPA) (US)** has developed a fully bottom-up approach to create their portfolio of programmes.[119]

[114] Biotechnology and Biological Sciences Research Council (2017b).
[115] Ministry of Science, Technology and Space (2017).
[116] National Institutes of Health (2016).
[117] National Science Board (2011).
[118] Personal communication (2016).
[119] Glennie and Bound (2016).

A.2.4. Funding schemes

RGC

The RGC funds a number of schemes across the UGC and self-financing sectors. Details of these are presented in Table 14.

Table 14: Details of grant funding schemes provided by the RGC

Sector	Type	Scheme	Details	Aim
UGC sector	Individual project grants	General Research Fund (GRF)	Small-scale, 2–3 year projects, 57 per cent of 2015/16 budget for UGC sector	To fund as many worthy projects as possible across a broad field within the funds available
		Early Career Scheme (ECS)	Small-scale, 2–3 year projects, 9 per cent of 2015/16 budget for UGC sector	To nurture junior academics and to prepare them for a career in education and research
		Humanities and Social Sciences Prestigious Fellowship Scheme (HSSPFS)	1 year fellowship to employ relief teachers/ administrators, 1 per cent of 2015/16 budget for UGC sector	To recognise excellence in the humanities and social sciences
	Collaborative research	Collaborative Research Fund (CRF)	Medium-scale, 3–5 years, 10 per cent of 2015/16 budget for UGC sector	To encourage research groups to engage in collaborative research across disciplines and/or across universities with a view to enhancing the research output of universities in terms of the level of attainment, quantity, dimensions, and/or speed; and to enable the acquisition of major research facilities or equipment for collaborative research
		Theme-based Research Scheme (TRS)	Large-scale, up to 5 years, four themes set by government, 18 per cent of 2015/16 budget for UGC sector	To focus academic research efforts of the UGC-funded universities on themes of strategic importance to the long-term development of Hong Kong
		Areas of Excellence (AoE) Scheme	Large-scale, up to 8 years, conducted every 2 years, not awarded in 2015/16 for UGC sector	To build on research areas of strength in Hong Kong and develop them into Areas of Excellence
	Joint research	National Natural Science Foundation of	5 per cent of 2015/16	To promote and further encourage research

Sector	Type	Scheme	Details	Aim
	schemes	China (NSFC)/RGC Joint Research Scheme French National Research Agency (ANR)/RGC Joint Research Scheme Germany/Hong Kong Joint Research Scheme Scottish Funding Council (SFC)/RGC Joint Research Scheme European Commission (EC)/RGC Collaboration Scheme *PROCORE*-France / Hong Kong Joint Research Scheme	budget for UGC sector They vary in size of the scheme, and in competitiveness. In all cases the RGC funds the researcher from the UGC-funded university, and the partner funds the individual from the partner institution.	cooperation and exchanges with regions outside Hong Kong. These can be divided into project grants, and travel/conference/ exchange grants.
	PhD scheme	Hong Kong PhD Fellowship Scheme (HKPFS)	PhD fellowships, 216 awarded in 2015/2016	To attract the best and brightest students in the world to pursue their PhD programmes in Hong Kong's universities
Self-financing sector	Individual project grants	Faculty Development Scheme (FDS)	Small-scale, 2–3 year projects, 32 per cent of 2015/16 budget for self-financing sector	To develop the research capability of individual academic staff in the local self-financing degree-awarding institutions so that they can transfer their research experiences and new knowledge into teaching and learning
	Capacity building grants	Institutional Development Scheme (IDS)	Large-scale projects of up to 3 years, 64 per cent of 2015/16 budget for self-financing sector	To build up the research capacity of local self-financing degree-awarding institutions in their strategic areas
	Collaborative project grants	Inter-Institutional Development Scheme (IIDS)	Small-scale funding for up to1 year, 3 per cent of 2015/16 budget for self-financing sector	To enhance academics' research capability in the local self-financing degree-awarding institutions and keep them abreast of new developments and challenging research topics

UGC sector

Collectively, these schemes available to the UGC sector aim to build up research capability in Hong Kong. They provide a selection of: research support and technical staff; equipment, consumables and

software licences; outsourcing of research work outside Hong Kong; travel and subsistence, including for conferences; relief teachers; relief administrators (HSSPFS only); high-performance computing services; survey expenses and research experience for undergraduate students. They do not fund the salaries of grant holders.

The GRF and ECS are response mode schemes, as are the AoE and CRF schemes provided that the research is collaborative. The HSSPFS is only for individuals from humanities and social sciences, while the TRS initially had three specific themes under which research could be submitted but now has four.

The RGC also administers the HKPFS, which is funded by the UGC. The HKPFS aims to attract the best and brightest students globally to pursue PhD studies in Hong Kong.

International comparator countries

The RGC's main types of funding schemes are common across countries, although the split between individual, collaborative and joint research schemes might not be so explicit in other countries. The majority of funding in all countries is response mode rather than directed.

While all countries also have funding for PhDs, this is not necessarily directly distributed through the funding bodies we have explored. Additionally, PhD places often have nationality-based or geographic eligibility requirements. For example, NSF (US) PhD funding is only available for US nationals,[120] and BBSRC (UK) grants only cover fees and living expenses if candidates are ordinarily resident in the UK.[121]

A.2.5. Success rates

RGC

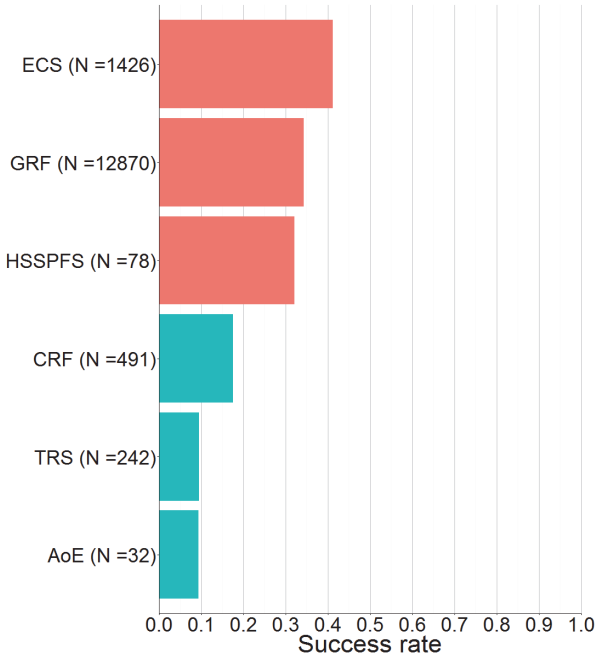
UGC sector

Figure 17 shows the success rates for applications to RGC funding schemes for the UGC sector between 2011 and 2015. Success rates for individual project grants are between 32 and 42 per cent, while those for collaborative grants are between 9 and 18 per cent.

[120] National Science Foundation (2016).

[121] Biotechnology and Biological Sciences Research Council (2015).

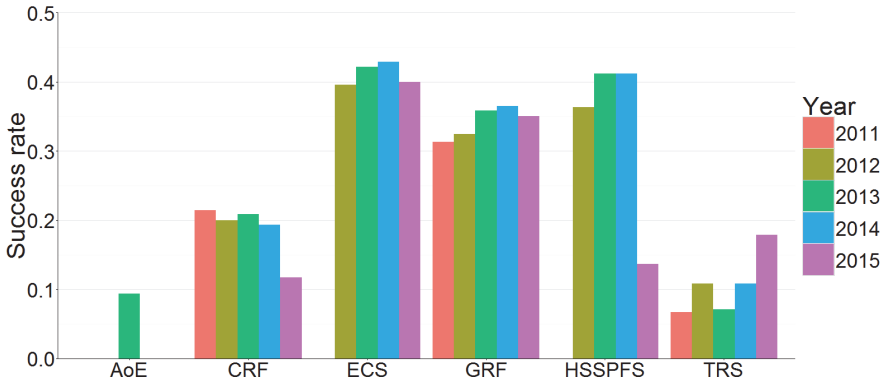
Figure 17: Success rates for RGC funding schemes for the UGC sector between 2011 and 2015[122]



The success rate of the ECS and GRF schemes has remained relatively constant over time (Figure 18); however, the success rate for the HSSPFS has dropped significantly in the last year despite having the same number of applications as in 2012. The ECS and GRF schemes are both seeing an increase in applicants, although not by more than 10 per cent.

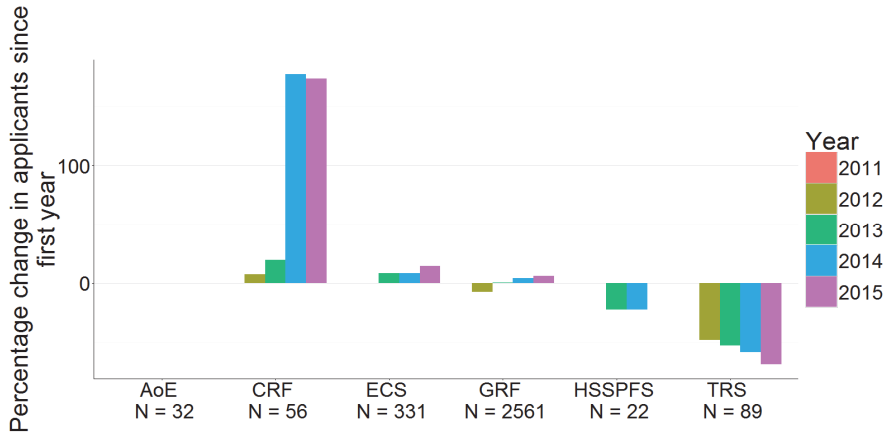
The success rate for the CRF dropped in the last year, whilst that for the TRS has risen. This matches the changes in applicant numbers (Figure 19); the CRF scheme has seen a large rise in applicants in the last two years after the removal of an institutional quota, while the number of applicants to the TRS has fallen.

Figure 18: Success rate for each scheme over time



[122] Individual project grants shown in red; collaborative grants shown in blue.

Figure 19: Change in number of applicants for each scheme over time



As would be expected, institutions have different numbers of awards and success rates (Figure 20). For the CRF, institutions with larger numbers of awards also have a higher success rate (correlation of 0.97). For the GRF, institutions with larger numbers of awards tend to have a higher success rate, although the correlation is weaker (0.52). For the ECS, there is no relationship between the number of awards and the success rate (correlation of 0.06).

Figure 20: The number of awards and success rate in the CRF, GRF and ECS schemes for each UGC-funded university

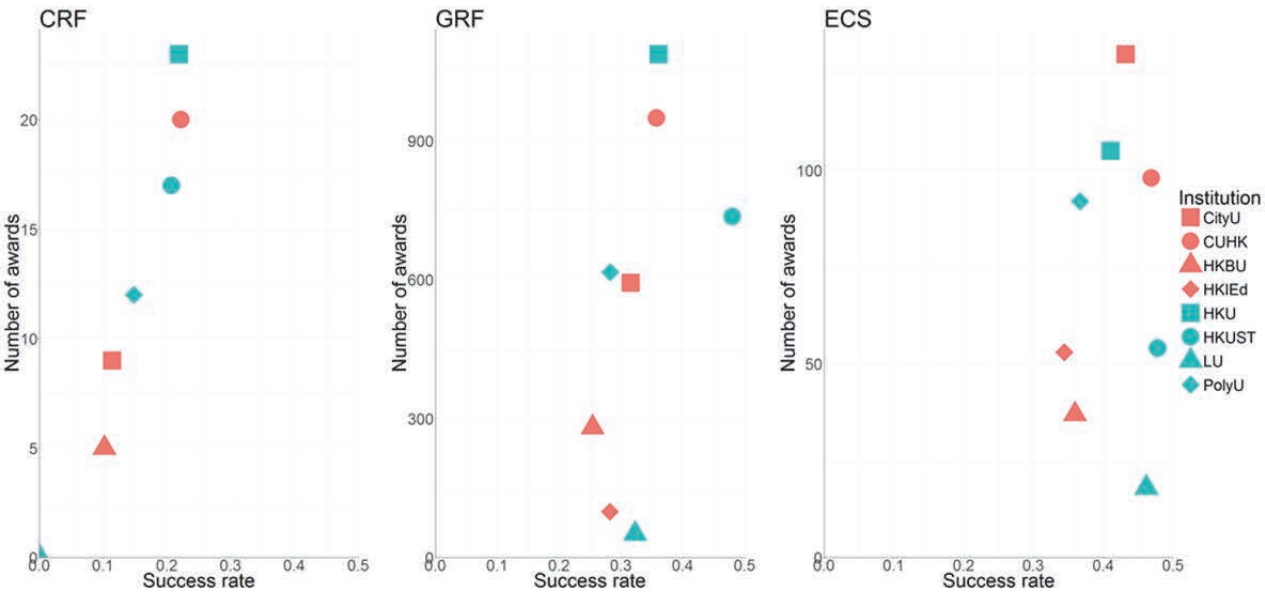
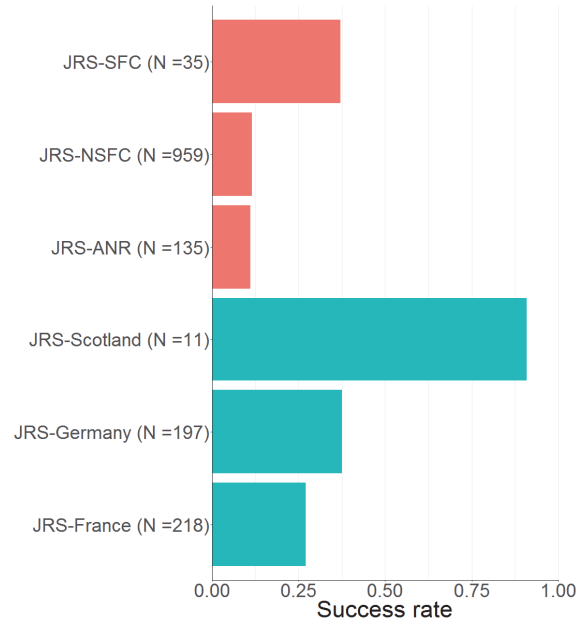


Figure 21 details the success rates for the joint research schemes that the RGC provides in collaboration with other international funders.

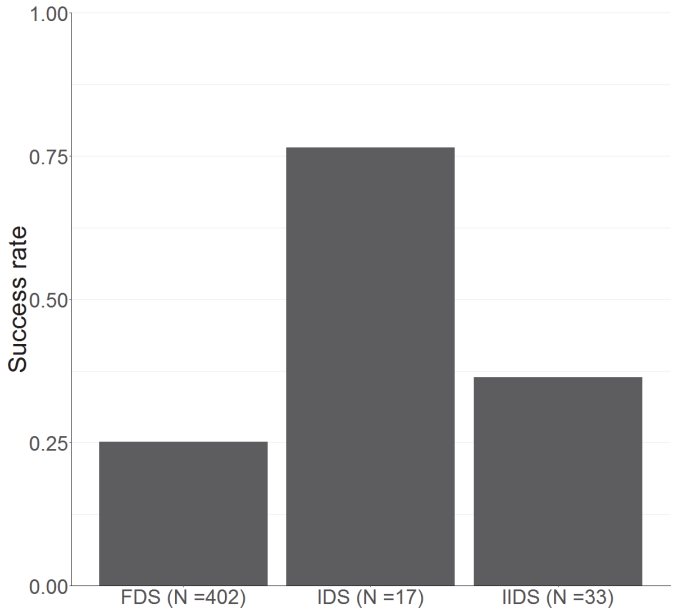
Figure 21: Success rates for joint research schemes[123]



Self-financing sector

The IDS scheme has a high success rate compared to other schemes available to self-financing institutions (Figure 22). The FDS, which provides project grants for developing individual researchers, has a lower success rate than the GRF and ECS schemes available to staff at UGC-funded universities (Figure 20 and Figure 22).

Figure 22: Success rates for RGC schemes for the self-financing sector



[123] Project grants shown in red; travel/conference/exchange grants shown in blue.

International comparator countries

The individual grant success rate for RGC grants is the highest individual grant success rate when compared to other countries (Table 15). The ISF and NSFC also have high success rates, whereas the BBSRC and the NSF both have success rates of around 25 per cent, and the European Research council and MBIE have success rates of around 10 per cent.

Table 15: Success rates for individual grants in comparator countries[124]

Funding body	Success rate (per cent)
RGC (Hong Kong)	32–42
ISF (Israel)[125]	33–35
NSFC (China)[126]	25–30
BBSRC (UK)[127]	25
NSF (US)[128]	24
European Research Council[129]	10
MBIE (New Zealand)[130]	7

A.2.6. Balance of basic and applied research

RGC

For the ECS and GRF schemes, panels assess whether the applications are basic or applied in nature, using the RGC's definitions presented in Box 1 (13 per cent were not classified). Grants are awarded only on academic merit. For both schemes, 65 per cent of the grants awarded were for basic research, and 35 per cent for applied research (Figure 10).

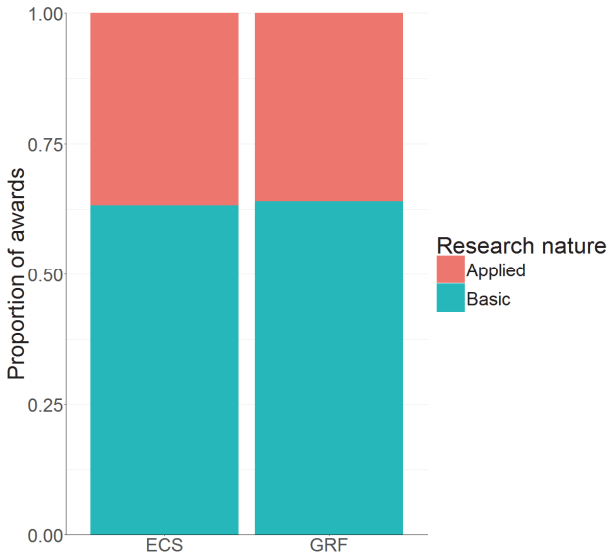
[124] All data is most recent available; data not available for Singapore and South Korea.
[125] Israel Science Foundation (2016).
[126] National Natural Science Foundation of China (2016a).
[127] Biotechnology and Biological Sciences Research Council (2017c).
[128] National Science Foundation (2013).
[129] European Research Council (2017).
[130] Reid et al. (2014).

Box 1: RGC definitions of basic and applied research

Basic research – research for the sake of advancing the frontiers of knowledge regardless of whether it would provide immediate benefit to mankind.

Applied research – efforts directed at meeting certain functional requirements which involve the application of theories to a specific area or for a specific purpose, and/or to enhance human life in the short/medium term.

Figure 23: Proportion of awarded grants classified by panelists as basic or applied



When considering all years together, there is a statistically significant difference in the success rate between basic and applied applications for both the ECS and the GRF (Figure 24). This statistical test means that, if it is assumed that basic and applied applications are of equal quality, basic applications are more likely to be awarded (although clearly there are other possible explanations for this difference). Looking within individual panels, this is true for the medicine and biology panel for the ECS, and all panels except the business studies panel for the GRF.

Over time, basic applications have always had a higher success rate for both the GRF and the ECS (Figure 25). The difference in success rate between applications categorised as basic or applied is decreasing over time in the GRF scheme, whereas in the ECS scheme the difference is increasing.

Figure 24: Success rate of grants classified by panelists as basic or applied

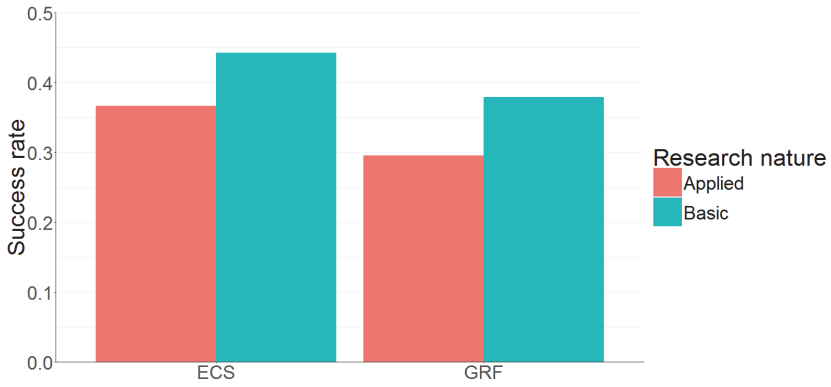
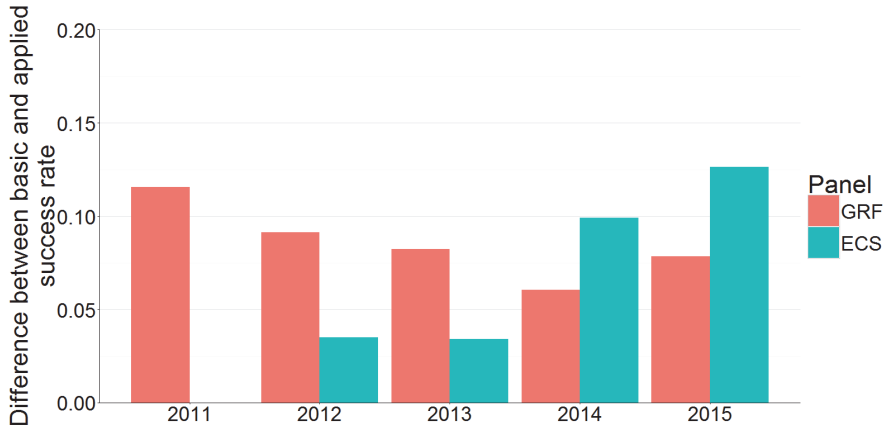


Figure 25: Difference between basic and applied success rate for the GRF and ECS over time



International comparator countries

Across the comparator countries, data is not available to allow us to calculate the overall proportion of basic and applied research funded. However, Singapore, South Korea and New Zealand have funding bodies with a particular applied focus. We were also unable to find data on comparative success rates for basic and applied research in the comparator countries. Previous RAND Europe research showed that there is not clear evidence on whether peer review rewards translational/applied research appropriately.[131]

A.2.7. Subject balance

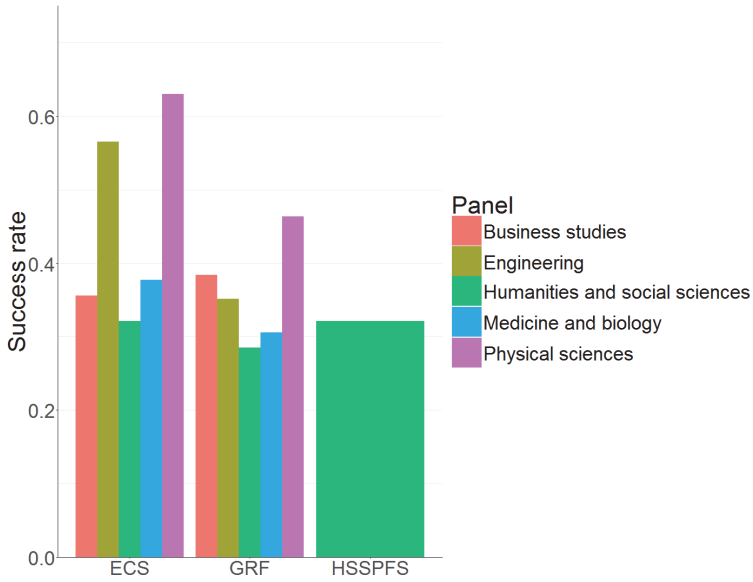
RGC

The ECS and GRF schemes are assessed by five subject panels: business studies, engineering, humanities and social sciences, medicine and biology, and physical sciences. A formula is used to determine the amount of money allocated to different panels. The formula allocates money across panels based on the number of proposals submitted that are deemed to be of a certain quality in each panel (as assessed by

[131] Guthrie et al. (2013).

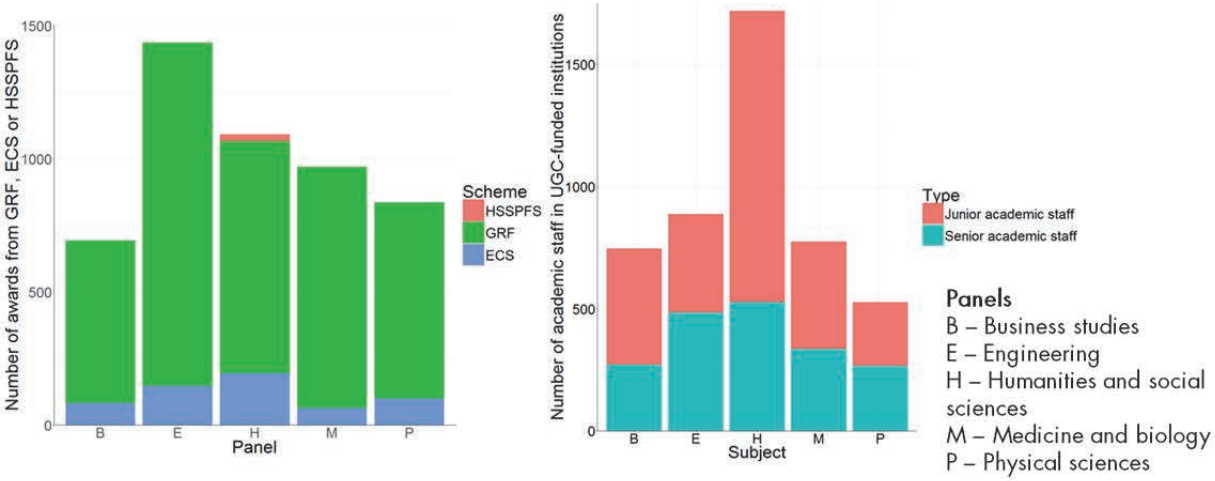
external reviewers) and the relative cost of proposals in that panel. Success rate for each panel therefore directly relates to the quality assessment (Figure 26).

Figure 26: Success rates for each subject panel



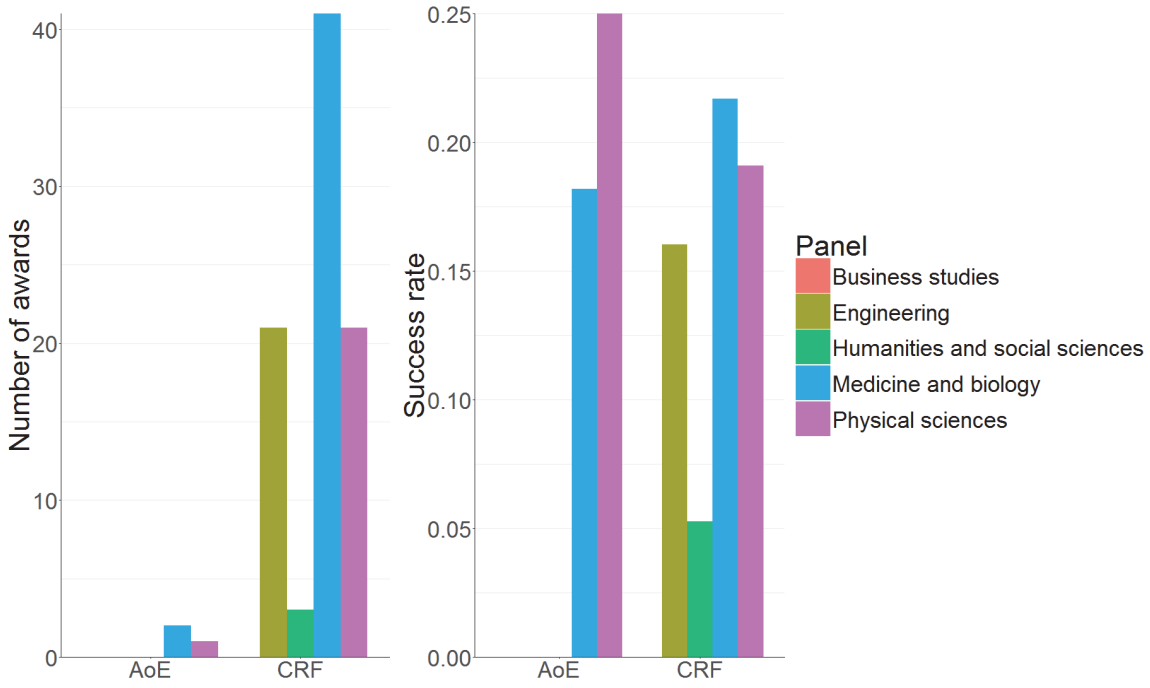
Between 2011 and 2015 the largest number of projects was awarded to the engineering panel, followed by the humanities panel, whose share has been increasing over time (Figure 27). Comparing the proportion of awards to the proportion of academic staff currently in universities, the largest proportion of staff fall within humanities and social sciences, which has nearly twice as many staff as the other subject areas, although the proportion of senior staff is the lowest of areas any area.

Figure 27: Number of awards allocated to each subject panel, and number of academic staff in UGC-funded universities in each discipline



The aims of the larger collaborative schemes include supporting collaboration between different fields, and therefore these schemes have no formula for allocating money to different areas. Biology and medicine received the largest number of both AoE Scheme grants and CRF grants (Figure 28). Humanities and social sciences have received the fewest collaborative grants, and have the lowest success rate. The TRS scheme is split into three specific themes, each of which has a similar success rate.

Figure 28: Number of awards and success rates for collaborative schemes



Self-financing sector

All schemes are available for all disciplines. In these plots we focus on the FDS, as the other schemes have fewer than 50 awards each. In the FDS, nearly 50 per cent of the awards are made by the humanities panel (Figure 29). The smallest proportion is made by the physical sciences panel, which also has one of the highest success rates. There is, however, no statistically significant difference in the success rates, meaning that based on the data from 2014/15 and 2015/16 the success rates between panels are not noticeably different (Figure 29). The FDS scheme shows a correlation (0.6) between the number of FDS awards at an institution and the success rate of FDS awards at the institution, meaning that institutions which have more awards overall tend to be more successful when they apply (Figure 30). This is similar to the trend seen with GRF grants within the UGC sector.

Figure 29: Proportion and success rate of FDS grants awarded by subject panel[132]

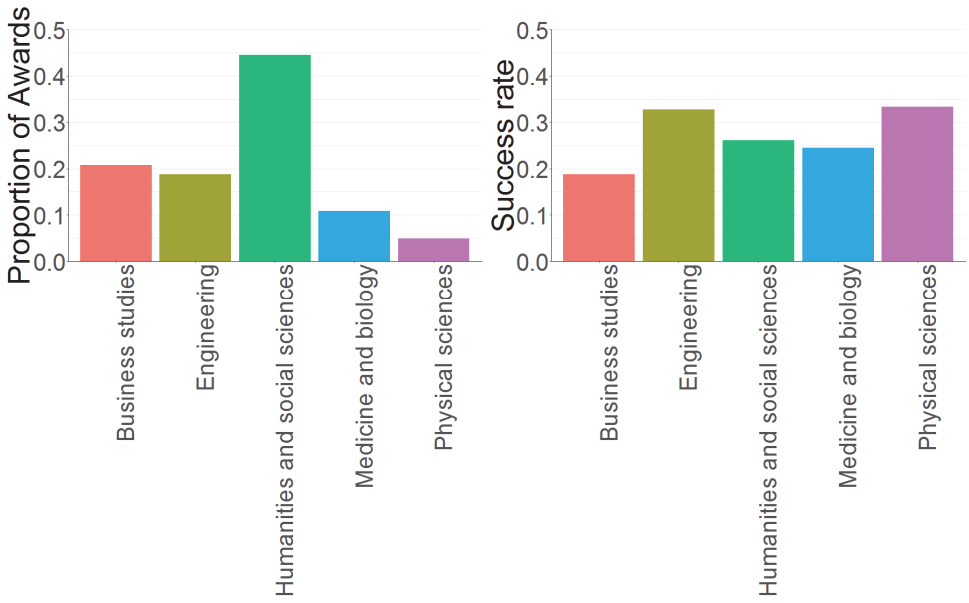
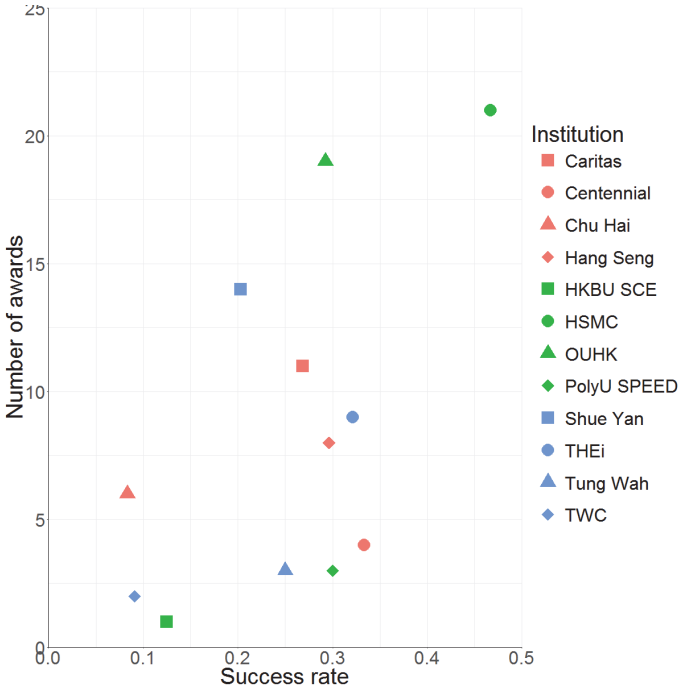


Figure 30: Number of awards and success rate in the FDS for each self-financing institution



International comparator countries

While subject balance is recorded in official documents of the majority of the funding bodies we investigated, the subjects listed vary significantly between countries, making direct comparison difficult.[133]

[132] For years 2014/15 and 2015/16

[133] Some of the funding bodies we considered also do not cover the full range of subjects.

Comparing the balance between humanities and arts spending and sciences spending with the balance struck by similar funding bodies in other countries shows that the RGC has a relatively high spend on arts and humanities (Table 16).[134]

Table 16: Ratio of spending between humanities and arts and sciences

Funder	Dates	Ratio of spending (humanities and arts: sciences) (per cent)
RGC	2011–2015	31:69
DFF (Denmark)[135]	2013	24:76
NRF (South Korea)[136]	2008–2011	13:87

A.2.8. Size and duration of funding

RGC

The average GRF or ECS grant is between two and three years in length, although longer durations can be requested if necessary. They range from US$20,000 to US$300,000, with an average of US$87,000, over this time period. The collaborative schemes range from three to eight years and from US$300,000 to US$12m (for further details see Table 14).

Within the RGC panel assessment, the amount of funding requested is reviewed and often the amount awarded is less than that requested (Figure 31). This is particularly striking for the ECS and GRF schemes – in the ECS half of awardees received less than 75 per cent of the amount they requested, and in the GRF half received less than 60 per cent.

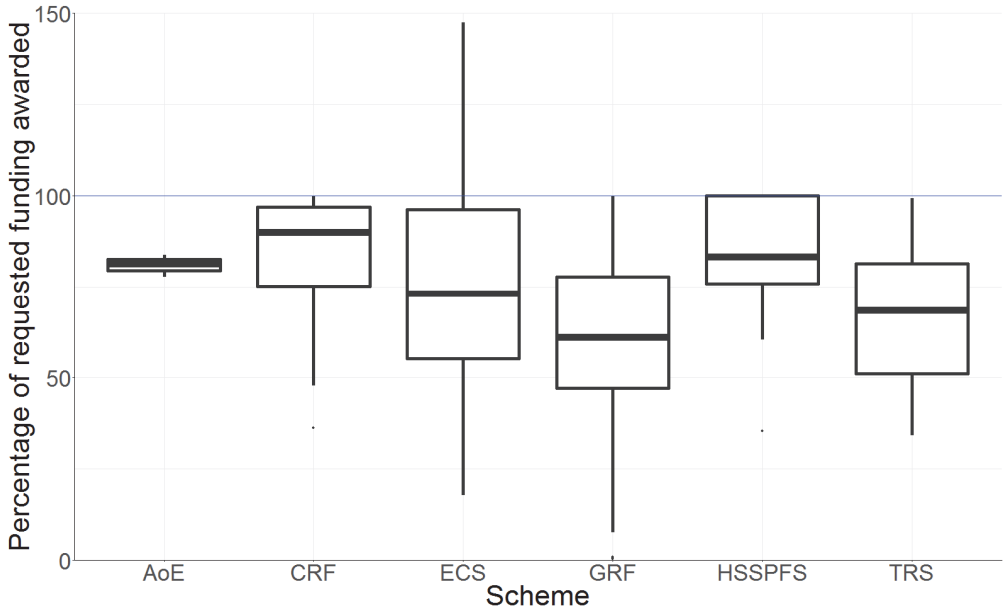
14 per cent of GRF grants and 8 per cent of ECS grants were awarded for a shorter duration than requested, and 0.1 per cent of GRF grants were awarded for a longer duration than requested. All other grants were awarded for the duration requested.

[134] Figures for the RGC spend include business studies.

[135] Danish Agency for Science, Technology and Innovation (2014).

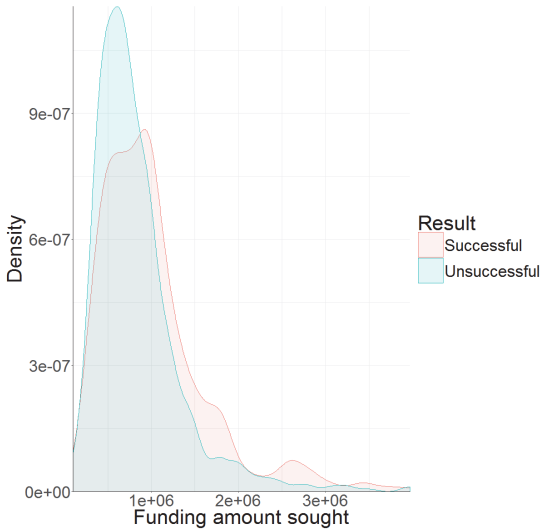
[136] National Research Foundation (2016c).

Figure 31: Percentage of requested funding awarded for RGC schemes



In all RGC schemes, on average the value of funding requested was slightly higher for successful grants than unsuccessful grants (Figure 32).

Figure 32: Density chart of the amount of funding sought (in HK$) by RGC applicants to the GRF scheme for successful and unsuccessful applicants[137]



International comparator countries

RGC grants are shorter than many grants in comparator countries, with the exception of NSF individual grants, which are comparable in length (Table 17). We have not been able to find comparative data on the proportion of funding requested that is ultimately awarded.

[137] A density plot shows the shape of a distribution; the area under each curve is 1. It is therefore possible to compare the shape of the two distributions, despite the fact that there are different numbers of applicants in each distribution.

Table 17: Length and value of average single investigator grants from the RGC and comparator funding bodies[138]

Funding body	Country	Grant length (years)	Funding value in thousand USD per year[139]
RGC	Hong Kong	2–3	30
DFF[140]	Denmark	3–5	225
ISF[141]	Israel	5 maximum	46–75
NSF[142]	US	2.5	118

A.2.9. Local focus/international significance

RGC

This study also looked at the needs of Hong Kong alongside the needs of the research community. We were therefore interested in exploring the balance between research projects with a local focus and those of international significance. The RGC does not routinely collect data on whether an application is of local or international significance, therefore, as a proxy, we have used the presence of 'Hong Kong' in titles of applications to estimate the number of projects with local focus (Table 18). Overall, nine per cent of applications have 'Hong Kong' in the title: this equates to seven per cent of successful proposals, and ten per cent of unsuccessful ones. Seventy-five per cent of applications with 'Hong Kong' in the title are submitted to the humanities panel, and there is a 50:50 split between those classified as basic and applied.

[138] This data was also available for South Korea, where grants range from US$45,000 to US$715,000 over 3–9 years. As the range of values is very large, an average could not be calculated, so it has not been included in the table. See National Research Foundation (2016b).

[139] Calculated as a function of available data, for example dividing the overall average value of awards by the average grant length.

[140] Danish Agency for Science, Technology and Innovation (2014).

[141] Israel Science Foundation (2016).

[142] National Science Foundation (2013).

Table 18: Percentage of grant applications to RGC schemes with 'Hong Kong' in the title

	Percentage of successful proposals that contain 'Hong Kong' in the title	Percentage of unsuccessful proposals that contain 'Hong Kong' in the title	Percentage of all proposals that contain 'Hong Kong' in the title
AoE	0%	3%	3%
CRF	8%	5%	6%
ECS	11%	17%	15%
GRF	7%	10%	9%
HSSPFS	8%	13%	12%
JRS-ANR	0%	2%	1%
JRS-CSIC	0%	0%	0%
JRS-ESRC	69%	73%	72%
JRS-France	5%	4%	5%
JRS-Germany	4%	11%	9%
JRS-NSFC	0%	3%	2%
JRS-NWO	0%	13%	6%
JRS-Scotland	20%	0%	18%
JRS-SFC	0%	5%	3%
JRS-SRFDP	0%	1%	1%
TRS	17%	23%	23%
All applications	7%	10%	9%

International comparator countries

No information assessing this issue in the other countries of interest was found.

A.2.10. Applicant characteristics

The RGC do not routinely collect data on demographic information of applicants (except for the HKPFS), therefore it is not possible to assess success rates by gender, nationality or ethnicity. These issues are seen to be of international importance, however, and funding bodies in the US and the UK do routinely collect this data.

A number of organisations also have specific schemes designed to strengthen diversity and inclusivity:

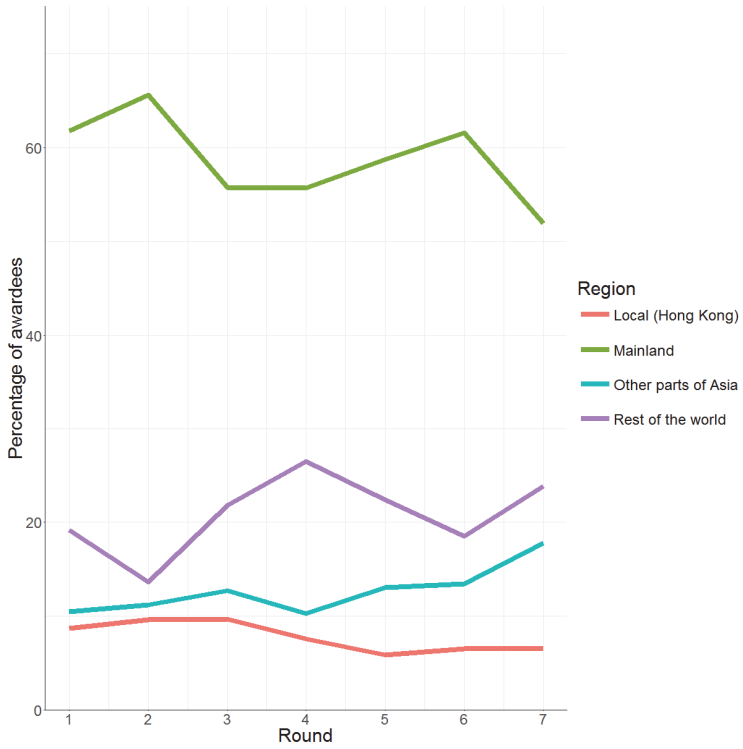
- The **NRF (South Korea)** has the young researcher programme which is targeted at both young researchers and women.[143]
- The **NSFC (China)** has a Fund for Less Developed Regions and two funds for young scientists.[144]

Inclusivity and diversity data is held for the HKPFS. The majority of individuals funded under the HKPFS are from mainland China, although that proportion decreased in the last year (Figure 33). The

[143] National Research Foundation (2016a).
[144] National Natural Science Foundation of China (2016b).

success rate has generally been highest for local students (approximately seven per cent on average) and lowest for students from Asia excluding mainland China and Hong Kong (approximately three per cent on average). Students from mainland China and other parts of the world have average success rates of five per cent and six per cent respectively. The proportion of awardees that are female ranges between 48 per cent and just under 40 per cent. There is no statistically significant change over time.

Figure 33: Nationality of HKPFS awardees



While the balance of grants across applicants, career stages, and whether teaching is integrated into the project are seen as important issues in this review, the RGC does not routinely collect data that would allow us to quantify or assess these issues.[145] Therefore it has not been possible to explore them in the document review. In view of this constraint, some of these data were collected via the online survey.

A.2.11. Decision making

RGC

The RGC is made up of local and non-local academics (11 and 13 respectively as at 1 March 2017) and local lay members (four as at 1 March 2017). There is also a non-academic staff of around 30 (the secretariat). It is headed up by a chairman, who is a local academic from a UGC-funded university and is responsible for appointing chairmen and members of steering committees and assessment panels, chairing

[145] Collection of data is bound by the Personal Data (Privacy) Ordinance in Hong Kong. The RGC clearly specify that data are collected solely for grant-assessing purposes. Demographic information such as gender, nationality or ethnicity is not collected.

RGC meetings, and being the face of RGC at external meetings. The chairman does not participate in the assessment of research proposals. The role of the chairman is currently part-time.

The RGC largely operates through Steering Committees and Assessment Panels/Committees. There are three Steering Committees to oversee the development and operation of particular funding streams:

- The Major Projects Steering Committee
- The HKPFS Steering Committee
- The Steering Committee on Competitive Research Funding for the Self-financing Degree Sector (SCSF).

Each scheme also has at least one assessment panel/committee. Committees and panels are almost all chaired by a member of the RGC, with the rest of the membership made up of a mix of local academics, local lay members, and non-local academics (except the SCSF, whose membership is made up of local academics). For all UGC-sector schemes, the chair of the committee is non-local.

International comparator countries

Using publicly available information from funding body websites, we have identified three types of decision making set-up.

Some funding bodies, like the RGC, are governed by a single entity:

- The **NSFC (China)** is administered by its Council which consists of the President, Vice Presidents and Council members. The Council is headed by one president and six vice presidents. It consists of 25 members who are scientists, engineering and technological experts and management experts from institutions of higher learning, research organisations, governmental administrations and enterprises.[146]
- The **NRF (Singapore)** is governed by the NRF Board; its members are appointed by the Prime Minister of Singapore.[147]
- The **DFF (Denmark)** is governed by its Board of Directors composed of nine members, all of whom must be recognised researchers. One of these members serves as the Chairperson of the Board. This Chairperson and all ordinary members of the Board are appointed by the Minister for Higher Education and Science. The Board is given the authority to draw up its own statutes. It carries the responsibility to ensure that the DFF fulfils its purpose in the foreseen manner. It is also empowered to establish and to name up to six subject-specific research councils.[148]
- The **MBIE (New Zealand)** has a Science Board appointed by the Ministry which is responsible for making independent decisions to allocate funding appropriated for research, science and technology and related activities.[149]
- The **BBSRC (UK)** is run by a Council appointed by the government. The Council oversee corporate policy and science strategy, taking into account the advice of the appointments board,

[146] National Natural Science Foundation of China (2017b).
[147] National Research Foundation (2017c).
[148] Danish Agency for Science, Technology and Innovation (2014).
[149] Ministry of Business, Innovation and Employment (2017).

remuneration board, audit committee and a collection of strategy advisory panels and research committees.[150]

Other funding bodies are governed by a single person:

- For the **NIH (US)** the Office of the Director is the central office, responsible for setting policy for NIH and for planning, managing, and coordinating the programmes and activities of all the NIH components. Additionally each institute and centre has its own director, sets its own agenda and administers its own budget.[151]

Others are governed by several leadership entities:

- The **ISF (Israel)** is led by a council, an executive committee and an academic board, working in coordination with each other. As head of the ISF, the Director-General is in charge of the organisation's academic and administrative activities in full coordination with the governing bodies. The Director General has the authority to make decisions according to ISF policy and represents the ISF in interactions with national and international organisations.[152]
- The **NSF (US)** leadership is divided into two major components:[153]
    - The Office of the Director oversees the NSF activities, its staff and the overall programme's management and day-to-day operations.
    - The National Science Board (NSB), constituted by 25 members representing a variety of science and engineering disciplines and geographic areas, plays a key role in establishing NSF policies: it has the ability to set strategic direction, approve budgets, approve the annual budget submission to the Office of Management and Budget, and approve new major programmes and awards.
- The **NRF (South Korea)** is governed by the President, the Board of Directors and the Director General.[154]

A.2.12. Assessment of applications

RGC

Assessment for RGC schemes is done by peer review. Assessment panels for all UGC-sector schemes consist of both local and non-local academics/lay members (Table 19). Those for the self-financing sector only include local members. For all schemes at least two panel members review the application, and they also send applications to external reviewers, 95 per cent of which are non-local.[155] For several funding schemes, local reviewers are used when local knowledge is required to review the proposal. Applications

[150] Biotechnology and Biological Sciences Research Council (2017d).
[151] National Institutes of Health (2017).
[152] Israel Science Foundation (2017b).
[153] National Science Foundation (2017).
[154] National Research Foundation (2016d).
[155] For CRF all reviewers are non-local.

are sent out to six to eight external reviewers (ERs) initially, with the target of obtaining three independent assessments for each proposal (Figure 34).

Table 19: Number of local and non-local panel members for different RGC funding schemes[156]

Funding schemes		Number of local academics/lay members	Number of non-local academics
UGC sector	Individual research	103	108
	Collaborative research	1	70
	HKPFS	22	27
	Joint research	40	19
Self-financing sector		32	0

Figure 34: General assessment process for RGC funding application

International comparator countries

Most countries use similar assessment processes to the RGC, relying on external peer reviewers and committees made up of external experts:

- For the **ISF (Israel)** professional committees are comprised of experts in different fields and are formed each year according to the subjects of the applications, meaning that the composition of the committees changes yearly. The 90 committees in the ISF (for the various programmes) are each composed of three to 12 members.[157]
- The **NSFC (China)** relies on review panels constituted by 1,693 panel members divided into 94 panels.[158]
- Other countries such as the US, UK, Singapore, South Korea and New Zealand also rely on external peer review to make their funding decisions.

[156] As at September 2016.

[157] Israel Science Foundation (2017c).

[158] National Natural Science Foundation of China (2017c).

Some are supported by committees in their decision making processes:

- For the **NSFC (China)**, there is an academic advisory committee, supervision committee and standing committee.[159]

Some funding bodies, unlike the RGC, rely on internal selection procedure rather than on external peer reviewers:

- For the **DFF (Denmark)**, members of subject-specific councils (responsible for funding decisions) are composed largely of established Danish researchers. They are increasingly supported by external peer review if the panel feel it would be helpful. There is a 'matrix committee' for appropriate distribution among the councils.[160]

A.2.13. Assessment criteria

RGC

The RGC have a wide range of assessment criteria to be considered for the different schemes. The main criterion in all cases is academic merit. Other common criteria are the relevance of the proposal to the needs of Hong Kong; the contribution the proposal makes to academic/professional development; the potential of the proposal for social, cultural or economic applications; institutional support; research ability of the investigators; and feasibility of the proposal.[161]

The joint schemes have specific criteria ensuring that the collaboration will be beneficial to both sides. Candidates for the HKPFS are also assessed on cultural diversity, leadership and societal responsibility, and communication and interpersonal skills. No other RGC schemes explicitly have these three criteria.

International comparator countries

We have reviewed high-level assessment criteria in all of the funding bodies we investigated, apart from the NFSC (China) and the NRF (South Korea), where the criteria were not available. Academic merit is the primary assessment criteria for all of these funding bodies.[162] They also all consider the feasibility and originality of the project.

Four of the five funding bodies consider the potential impact of the proposal: the NRF (Singapore), the BBSRC (UK), the NSF (US), and the ISF (Israel). The NRF (Singapore) and MBIE (New Zealand) also consider the impact/relevance of the proposal to the country. The only funding body that does not consider impact is the DFF (Denmark). It does, however, consider the relevance of the project to Danish research. The integration of research and education is considered by the NSF (US) and the DFF (Denmark).

[159] National Natural Science Foundation of China (2017b).
[160] Danish Agency for Science, Technology and Innovation (2014).

[161] Applications are not necessarily assessed against each of these criteria for all schemes; in many cases the criteria are instead used as prompts for the assessor to think about.

[162] National Research Foundation (2017d) (Singapore); Biotechnology and Biological Sciences Research Council (2017e) (UK); National Science Foundation (2015) (US); Israel Science Foundation (2016) (Israel); Danish Council for Independent Research (2016) (Denmark).

A.2.14. Conflict of interest

RGC

Council members, panel members and external reviewers are obliged to comply with the RGC code of conduct, and hence are required to declare any conflict of interest. Members are required to declare conflicts of interest on appointment, reappointment, change of circumstances and annually. During the assessment process, further conflict of interest declarations are required. Panel members can do this both before applications are assigned to them, and once applications have been assigned. External reviewers are asked to do this before they carry out their review. Relationships viewed as creating conflicts of interest are listed both on the guidelines documents for members and external reviewers, and on the assessment forms.

Two types of conflict of interest are listed:

1) Institution-related conflicts, such as consulting or employment at the institution; and
2) Application-related conflicts, including a work-related or personal relationship with the applicant or having pre-reviewed the application.

If individuals believe that there is a major conflict of interest then they are asked not to perform the review. If the conflict of interest is viewed as minor then they can declare the relationship with the institution or applicant on the assessment form and a panel member of chairmen can decide the severity of the conflict of interest.

International comparator countries

We found information on conflict of interest declaration for only a few funding bodies. Two of these have conflict of interest policies covering their funding:

- The **NSF (US)** has a broad conflict of interest policy that applies to civil service employees; visiting scientists, engineers, and educators; and those working at the NSF under the Intergovernmental Personnel Act. This precludes anyone with a possible conflict of interest from processing or evaluating the application. [163]
- The **BBSRC (UK)** has a conflict of interest process for peer reviewers. All members of the council and research boards and panels are also required to declare their conflicts of interest. These declarations are published on the BBSRC website. [164]

One funding body has a more exclusive policy applied specifically to evaluators:

- The **NRF (South Korea)** conflict of interest policy, the 'Rule of Exclusion', specifically applies to evaluators. This rule 'excludes' or restricts evaluators who may be either affiliated to, or have been awarded their final degrees at the same institution as the applicant for evaluation.[165]

All of the above policies consider both applicant-based and institution-based conflicts of interest.

[163] National Science Foundation (2017b).
[164] Biotechnology and Biological Sciences Research Council (2017f).
[165] Personal communication (2016).

A.2.15. Research improprieties

RGC

The RGC also has three Disciplinary Committees (DCs) to deal with research improprieties discovered during the processing of funding applications:

- The DC(Investigation), which advises on policies and procedures for investigating alleged cases and makes recommendations to the RGC on whether alleged cases are substantiated or not;
- The DC(Penalty), which advises on principles and guidelines in determining the level of penalty for substantiated cases, and makes recommendations to the RGC on the level of penalty for substantiated cases; and
- The DC(Appeal), which advises on policies and procedures adopted in handling appeal cases concerning research improprieties, and considers the findings and recommendations of the appeal board and makes recommendation to the RGC. This includes advising on the level of penalty.

Each committee consists of three different non-RGC members and two non-local or lay RGC members.

International comparator countries

Very little information is available regarding other research funding bodies but in the bodies for which we have information, it appears those processes are handled by a single entity, namely:

- The **NSFC (China)** handles academic misconduct through its Supervisory Committee.[166]
- The **NSF (US)** deals with academic misconduct through its Office of the Inspector General, which is independent from the NSF. This office is in charge of investigating the cases through its Office of Investigations. The results of their investigations are referred to the Department of Justice or other prosecutorial authorities for criminal prosecution or civil litigation, or to NSF management for administrative resolution. Investigations are split into two types: criminal and civil investigations, and administrative investigations.[167]

A.3. Caveats and limitations

The review of comparative funding bodies was compiled using public documents, and the information compared is therefore dependent on the availability of public documents that describe processes in funding bodies. In addition, due to limited resources, it was not possible to do a fully comprehensive comparison covering the wider literature.

[166] National Natural Science Foundation of China (2017d).
[167] National Science Foundation (2017c).

Annex B Results from the online surveys and consultation

Online surveys and an online consultation were designed to collect views and experiences of the RGC from as wide a range of stakeholders as possible. The online surveys were targeted at stakeholders directly involved with the RGC, including successful and unsuccessful applicants and RGC panel and committee members. The consultation was publically available and open to all, with the aim of allowing a broader group of stakeholders, such as other government bodies, the legislative council, research users and other stakeholders, to input into the review.

This annex sets out the methodology for the deployment and analysis of the online surveys and consultation, and then describes the findings. We provide both quantitative analyses of the closed questions in the survey and qualitative analysis of the responses to open questions and the consultation. The annex is structured around the quantitative questions asked in the survey, with the qualitative results from the survey and online consultation provided around these questions as appropriate to add context to the results.

B.1. Approach

B.1.1. Surveys

The purpose of the surveys was to ensure that we captured the perspectives and views of both successful and unsuccessful applicants to RGC funding schemes, as well as both local and international panel/committee members.

To deliver this, three online surveys were developed. The questions were tailored as appropriate to the audience, which comprised:

1) Applicants to RGC funding schemes between 2011 and 2015 from within UGC-funded universities;
2) Applicants to RGC funding schemes between 2011 and 2015 from within the self-financing sector; and
3) RGC assessment panel/committee members serving between 2011 and 2015.

In line with the aims of the study (Section 1.3), the surveys focused on the two main themes of the review: the appropriateness of the current funding schemes, and the efficiency and effectiveness of the RGC structure. We developed a set of Likert scale questions asking about opinions on these two themes, along with a small number of open questions on the way the RGC has enabled researchers. We also

provided opportunities to suggest improvements to the current system.[168] The full survey protocols can be found in Annex D.

To enable the project team to send personalised links to the survey, the majority of institutions (both UGC-sector and self-financing sector) provided us with lists of contact details for applicants to schemes. Two institutions (HKU and CUHK) were not willing to provide contact details for their staff and instead central teams within these institutions sent out a general link to the relevant staff in their institutions. The UGC provided us with lists of contact details for panel/committee members.

Surveys were hosted through SelectSurvey and reminders were sent out on a biweekly basis to those who had not accessed the survey.[169] The surveys were originally open for four weeks from 20 October to 20 November 2016. In order to improve the response rate – particularly those from institutions that sent out only a general link, which were significantly lower – the surveys were left open for an extra two weeks, until 4 December 2016.

Quantitative analysis of the survey data was conducted in R.[170] For all Likert scale questions individuals could select 'don't know'; these responses are not shown in the graphs. Responses of 'agree' and 'strongly agree' are counted as agreement; responses of 'disagree' and 'strongly disagree' are counted as disagreement.

The survey included five open-ended questions, which were analysed qualitatively in Excel. Two of these were linked to the quantitative questions, and the other three were wider and asked:

- Has RGC funding enabled you to develop your work and career beyond the lifetime of an individual grant or project? In what ways?[171]
- Based on any experience you may have had of other national systems for supporting research, what would you recommend to RGC from these systems and why?[172]
- Is there anything else not covered here that you think we should consider in this study?[173]

For the qualitative analysis, broad analytical categories were developed for each question. In addition, due to the breadth, depth and diversity of views reflected across these responses, individual responses to any question may have contained information relevant to any category and would have been coded accordingly. Such an approach was deemed necessary because many responses contained a rich array of reflections, ideas and opinions across the categories and we did not want to lose this diversity of viewpoints. For example, a response to a question about research support required might have also included further views about the review process. In this sense, the unit of analysis was the entirety of an

[168] A Likert scale is a rating scale used in questionnaires which captures the range of intensity of feelings for a given item. We used the following levels in the scale: strongly agree, agree, neutral, disagree, strongly disagree, and don't know. For details, see Likert (1932).

[169] SelectSurvey is an online survey tool used by RAND and hosted by the RAND US Information Science and Technology (IST) group. See SelectSurvey (2017).

[170] R is a statistical programming language. See Comprehensive R Archive Network (2017).

[171] This question was answered by 535 UGC-sector researchers and 43 self-financing sector researchers.

[172] This question was answered by 396 UGC-sector researchers, 20 self-financing sector researchers, and 127 RGC committee/panel members.

[173] This question was answered by 416 UGC-sector researchers, 26 self-financing sector researchers, and 86 RGC committee/panel members.

individual's response across the questions. However, it does mean there is a risk of some ideas being over-represented and we comment on this further in the caveats and limitations section of this annex (Section 8.3).

B.1.2. Online consultation

An online consultation, open to the general public, was designed to capture the view of wider stakeholders such as the Legislative Council, and research users in the industrial and charitable sectors. The consultation consisted of three open questions asking what the RGC should stop doing, start doing and continue to do. The online consultation protocol can be found in Annex D.

A link to the consultation was also made available on the UGC website, alongside an invitation written in both English and Chinese, and a link was also provided at the end of the survey in case respondents to the survey wished to share further views on the RGC. In addition, we contacted 821 stakeholders, through a list identified and provided by the UGC to participate in the online consultation. This list included the Secretariat of the Legislative Council, which was asked to distribute the consultation request and link to all members of the Legislative Council.

As with the survey, the consultation was originally open for four weeks from 20 October 2016. As it was linked to in the survey it was also kept open until 4 December 2016 when the survey deadline was extended. Due to an error in Chinese translation on the UGC website, the deadline was further extended until 24 December.

Online consultation responses were coded and analysed using the same method and categories as the open-ended survey responses.

B.2. Results

The following sections summarise the results from the surveys and online consultation. We start by providing a summary of response rates, and then present an analysis of each of the survey questions, including insights from the open-ended questions where appropriate, and highlighting similarities and differences between the surveys.

B.2.1. Response rates

Survey

Personalised links were sent to 3,201 individual applicants from the UGC sector and self-financing sector and members of the RGC assessment panels and committees. From these three surveys we achieved response rates of 38 per cent, 42 per cent and 48 per cent respectively (see Table 20), which is around the rate expected for surveys.[174,175] In addition, two universities, CUHK and HKU, sent out a general link to their staff. This link achieved a response rate of approximately 11 per cent.[176]

[174]We count responses as any respondent who filled in at least one of the Likert scale questions. While the majority of respondents who filled in one question did then go on to fill out all questions, there is a slightly higher response rate for questions that appeared first in the survey than for those at the end.

Table 20: Response rate by survey

Survey	Number of delivered invites	Number of responses	Response rate
UGC-funded universities to whom we sent personal links	2260	887	38 per cent
UGC-funded universities who sent out a general link	~2000	256	~ 11 per cent
Self-financing	338	143	42 per cent
RGC panel	603	288	48 per cent

Due to movement of staff between institutions over time, some staff currently at CUHK and HKU received a personalised link if they were included under another institution, and some staff from other institutions received the general link provided by CUHK and HKU. Table 21 shows the collective response rate from both of these surveys for each institution. While we received a much lower response from the two institutions that sent out general links, the responses overall are similar to those from other institutions, giving us confidence that our overall response rate means that we have a good picture of views across the sector. We also included individuals from CUHK and HKU in our focus groups (see Table 30 in Annex C).

Table 21: Response rate at each of the UGC-funded universities

Institution	Number of delivered invites	Number of responses	Response rate (per cent)
CityU	535	212	40
CUHK	1059	132	12
EdUHK	215	106	49
HKBU	309	141	46
HKU	~1000	118	~11
HKUST	429	171	40
LU	76	37	49
PolyU	696	220	32

[175] IPSOS (2010).

[176] CUHK sent the general link to 1,059 individuals. HKU estimate that they sent it to approximately 1,000 individuals.

To check the representativeness of our sample we compared the subject balance of each institution to available demographic data (Table 22).[177] For the majority of institutions, the subject balance of respondents to the survey is very similar to the balance within each institution. The institution with the largest difference is CUHK, which is one of the universities with a lower response rate. One of the concerns about having a lower response rate from CUHK is that it contains one of few medical schools in Hong Kong; however, as the bias appears to be towards biology and medicine there is less concern that individuals from medical schools are being missed.

Table 22: Difference between percentage of respondents from each institution in each subject in the survey, and the proportion of academic staff in each subject[178]

	Biology & medicine	Business studies	Engineering	Humanities and social sciences	Physical sciences
CityU	4%	-6%	6%	-7%	4%
CUHK	16%	-10%	-6%	1%	0%
EdUHK	3%	1%	3%	-2%	-5%
HKBU	1%	-4%	-1%	3%	1%
HKU	4%	-4%	-5%	0%	5%
HKUST	4%	-3%	0%	1%	-2%
LU	0%	0%	3%	-2%	0%
PolyU	1%	-3%	0%	2%	2%

Consultation

The consultation received 111 unique responses. The majority of responses are from UGC-sector universities (Table 23); however, the consultation also received responses from five government departments, four associations and a foundation. Table 24 shows the number of respondents from each UGC-funded university. The majority of these responses are from CUHK and HKU, which had the lowest response rates in the surveys. Comparing email addresses of respondents from these two universities, where provided,[179] there is only a 30 per cent overlap between the survey and the consultation, indicating that a number of respondents from these universities filled in the consultation but did not also fill in the survey.

[177] We used the proportion of academic staff in each discipline in each university from the academic year 2014/2015; this data was provided to us by the UGC.

[178] We used the proportion of academic staff in each discipline in each university from the academic year 2014/2015; this data was provided to us by the UGC.

[179] 44 of the 72 respondents from CUHK and HKU provided their email address.

Table 23: Number of respondents per respondent type for the online consultation

Respondent type	Number of responses
Associations/foundations	5
Government	5
International	2
SF	3
UGC	94
Unknown	2

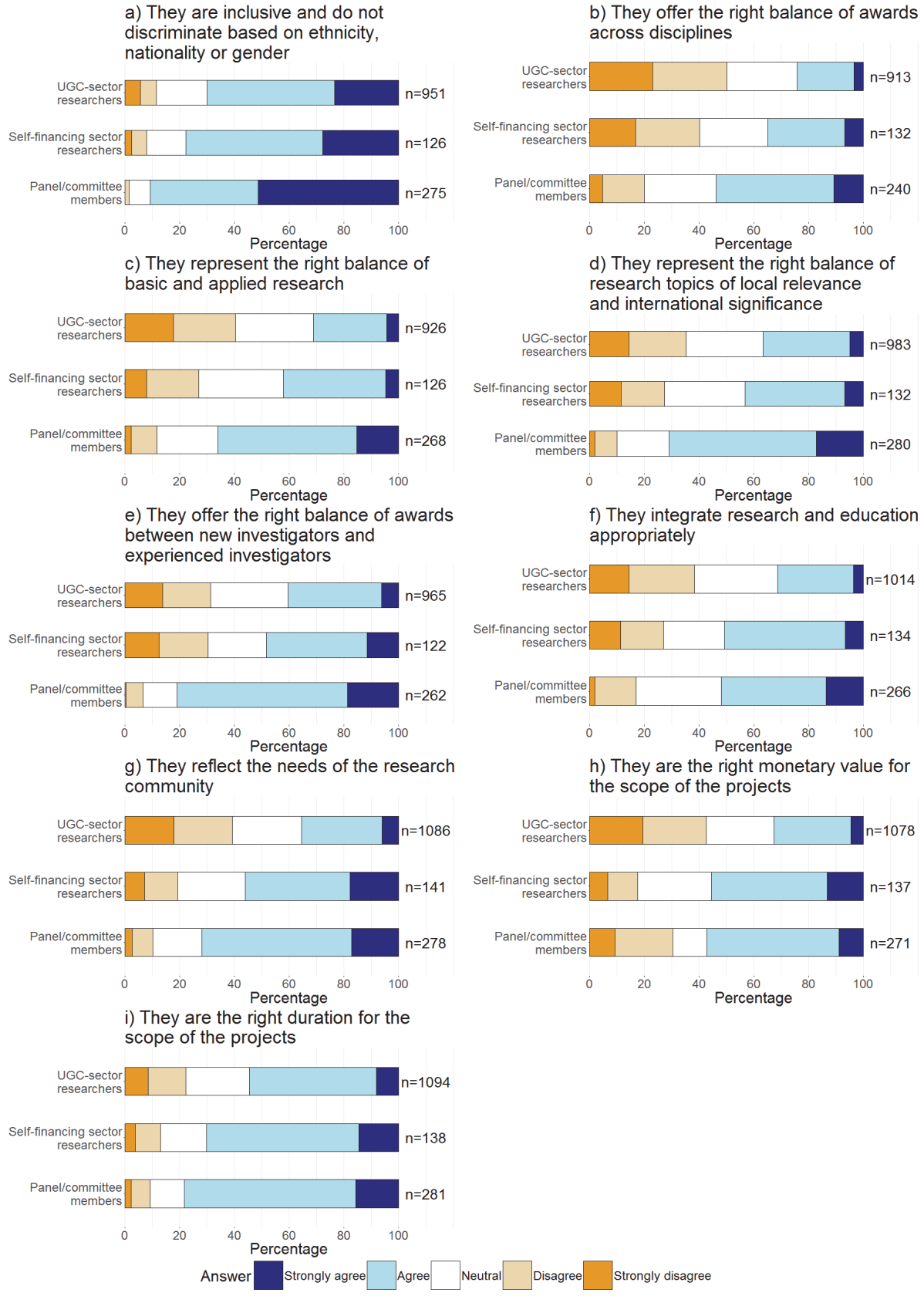
Table 24: Number of respondents to the online consultation from each UGC-funded university

UGC-funded university	Number of responses
CityU	1
CUHK	39
EdUHK	7
HKBU	4
HKU	33
HKUST	2
LU	1
PolyU	7

B.2.2. Funding schemes provided by the RGC

All survey respondents were asked the extent to which they agreed with a series of statements about the funding schemes provided by the RGC (Figure 35).

Figure 35: Survey respondents' opinions on aspects of the RGC funding schemes[180]



[180] Responses ordered from 'strongly disagree' on the left to 'strongly agree' on the right.

When asked about the inclusiveness of the schemes, all respondent types felt strongly that funding schemes are inclusive and do not discriminate based on ethnicity, nationality or gender (the level of agreement with the statement was: UGC-sector researchers 70 per cent, self-financing sector researchers 78 per cent, panel/committee member respondents 91 per cent) (Figure 35a).[181]

We also asked about the balance of funding across the portfolio, in particular the balance of funding across disciplines, across basic and applied research, between research of local relevance and of international significance, and between the different career stages that are financed through the RGC awards. The highest proportion of respondents disagreed with the statement that the funding schemes offer the right balance of awards across disciplines (Figure 35b). Only 24 per cent of researchers from the UGC sector and 35 per cent from the self-financing sector agreed with the statement that the balance is currently correct; panel/committee members were more positive (54 per cent agreement). There was slightly more agreement with the statement that the current balance of basic and applied research is correct (Figure 35c: UGC sector 31 per cent, self-financing sector 42 per cent, panel/committee members 66 per cent), and the statement that the current balance of research with local relevance versus international significance is correct (Figure 35d: UGC sector 37 per cent, self-financing sector 43 per cent, panel/committee members 71 per cent). The highest levels of agreement, which were still below 50 per cent for researchers, were with the statement that the balance of awards to new versus experienced researchers is correct (Figure 35e: UGC sector 40 per cent, self-financing sector 48 per cent, panel/committee members 81 per cent).

When asked about whether the RGC funding schemes are meeting the needs of the research community through the integration of research and education, and through the value and duration of awards (Figure 35f-i), panel/committee members disagreed most with the statement that the funding schemes are the right monetary value for the scope of the projects (30 per cent, Figure 35h). This is the one statement with which panel/committee members disagreed more than the self-financing researchers. However, panel/committee members still expressed a higher level of agreement than researchers (Figure 35h: RGC sector researchers 33 per cent, self-financing sector researchers 55 per cent, panel/committee members 57 per cent). Researchers were also asked if, assuming the total funding level is fixed, RGC should award fewer but larger grants, or maintain the current distribution. Eighty-eight per cent of both UGC-sector and self-financing sector researchers thought that, in this situation, the current distribution should be maintained.

The value of the awards, the integration of research and education, and whether or not the current funding schemes meet the needs of researchers all had similar levels of agreement from researchers (Figure 35f-h: approximately 35 and 55 per cent for the UGC sector and self-financing sector respectively); panel/committee members were least convinced that research and education are integrated appropriately (52 per cent agreement). All respondent types agreed with the statement that the duration of awards is appropriate (Figure 35i: UGC sector researchers 55 per cent, self-financing sector researchers 70 per cent, panel/committee members 78 per cent).

[181] Responses of 'agree' and 'strongly agree' are counted as agreement; responses of 'disagree' and 'strongly disagree' are counted as disagreement.

Perceptions of different types of survey respondents

Overall, with the exception of the statement on the value of awards, panel/committee members responded more positively than researchers, with the highest level of agreement (at least 50 per cent of respondents agreeing with each statement), and the lowest levels of disagreement (fewer than 20 per cent disagreeing with each statement).

Of the researchers, self-financing sector researchers were more positive than UGC-sector researchers; at least 35 per cent of respondents agreed with each statement, and over 50 per cent agreed with the following three statements:

- Funding schemes are inclusive and do not discriminate based on ethnicity, nationality or gender (77 per cent, Figure 35a).
- Funding schemes reflect the needs of the research community (56 per cent, Figure 35g).
- Funding schemes integrate research and education appropriately (51 per cent, Figure 35f).

UGC-sector researchers had the lowest level of agreement and highest levels of disagreement for all statements. There was a higher percentage of disagreement than agreement on the following five statements:

- RGC funding schemes offer the right balance of awards across disciplines (50 per cent disagreed, 24 per cent agreed, Figure 35b).
- RGC funding schemes offer the right monetary value for the scope of the projects (43 per cent disagreed, 33 per cent agreed, Figure 35h).
- RGC funding schemes offer the right balance of basic and applied research (41 per cent disagreed, 32 per cent agreed, Figure 35c).
- RGC funding schemes reflect the needs of the research community (39 per cent disagreed, 35 per cent agreed, Figure 35g).
- RGC funding schemes integrate research and education appropriately (38 per cent disagreed, 32 per cent agreed, Figure 35f).

Disciplinary differences

There was some variation between respondents from different disciplines[182] in their responses to the statements posed (Table 25). Social sciences and humanities and business studies scholars had the highest level of disagreement with the statement that the RGC funding schemes offer the right balance of awards across disciplines (67 per cent and 53 per cent disagreed, respectively), while researchers from biology and medicine, physical sciences and engineering sciences had the highest level of disagreement with the statement that the RGC funding schemes offer the right monetary value for the scope of the projects (57 per cent, 39 per cent and 51 per cent, respectively) (Table 25). On average, physical science researchers had the highest level of agreement and lowest level of disagreement with statements, whereas biology and medicine and social sciences and humanities researchers had the lowest level of agreement and highest level of disagreement with statements.

[182] Respondents were asked to select their disciplinary area; multiple disciplinary areas could be selected. Respondents who selected multiple disciplines have been classified as 'multiple disciplines'.

Table 25: The percentage of UGC-sector respondents from each discipline who responded 'disagree' or 'strongly disagree' with each statement about the RGC schemes[183]

	Biology and medicine	Business studies	Engineering sciences	Multiple disciplines	Physical sciences	Social sciences and humanities
They are inclusive and do not discriminate based on ethnicity, nationality or gender	10%	10%	8%	8%	8%	17%
They are the right duration for the scope of the projects	30%	31%	16%	24%	10%	22%
They are the right monetary value for the scope of the projects	57%	26%	51%	45%	39%	39%
They integrate research and education appropriately	44%	38%	35%	30%	24%	44%
They offer the right balance of awards across disciplines	50%	53%	31%	46%	29%	67%
They offer the right balance of awards between new investigators and experienced investigators	40%	26%	30%	25%	30%	31%
They reflect the needs of the research community	42%	37%	35%	41%	34%	42%
They represent the right balance of basic and applied research	42%	36%	37%	38%	32%	46%
They represent the right balance of research topics of local relevance and international significance	33%	34%	29%	33%	25%	44%

A third of consultation respondents,[184] spanning researchers as well as government and industry associations, commented on the fact that the RGC provides funding support and should continue to do so. One industry association responding to the consultation commented that the RGC considers 'the different needs of researchers in various disciplines by providing different funding options (e.g. individual research, teaching relief)' and that it 'provides a good pool of funding for a diverse range of local research'. The reasonable rates of success (30 per cent) and support of early-career schemes (the flexibility of the fund) were also noted and valued.

Inclusivity

Discrimination or bias was largely mentioned in relation to a perceived systemic bias towards 'the top three universities' (ten UGC-sector researchers).[185] Two UGC-sector researchers also noted that they felt there was a bias against foreign researchers; three consultation respondents also mentioned discrimination against non-Chinese researchers. While other inclusivity issues did not come up in terms of who receives grants, two researchers did note that they felt there could be greater inclusivity on assessment panels.

Balance of individual and collaborative awards

The balance of the current award schemes was mentioned in all surveys in the open-ended questions. In particular, on the balance across the portfolio between single investigator grants and collaborative grants, 11 UGC-sector researchers and 1 panel member noted that they thought too much money is put into collaborative schemes in comparison to single investigator grants; 2 respondents to the consultation also mentioned this. It was suggested by some respondents that the current balance could harm early-career researchers (ECRs) as they would not be eligible for the large collaborative grants. Four RGC sector researchers and four panel members specifically mentioned that they felt the options for young investigators could be improved, with some suggesting that current schemes could have eligibility

[183] Shading illustrates percentage of respondents that disagreed; larger levels of disagreement are indicated by darker red.

[184] 40 out of 110.

[185] The survey received responses from: 1143 UGC-sector researchers, 143 self-financing sector researchers and 288 RGC panel members/committee members.

extended to researchers not yet on substantiation-related research tracks.[186] In the consultation, even further broadening of the eligibility criteria was suggested to also cover pre-qualified research entities or individuals. In the survey and the online consultation, respondents suggested that for early-career researchers there could be small short-term grants available to get researchers started. One self-financing researcher also wanted an extension of eligibility in that sector to allow academic administrators to apply for research funding.

Disciplinary differences

The balance of grants across disciplines was mentioned with regard to the different success rates between disciplines, with a number of researchers questioning whether it is fair for some disciplines to have higher success rates than others (five UGC-sector researchers).

Some researchers noted that the current system does not recognise disciplinary differences, as the same mechanisms are used to support research across the disciplines. Business studies was described on multiple occasions as being different from other disciplines and having different needs (ten UGC-sector researchers and two panel members). These differences are partly historical, as researchers noted that researchers in business schools have not traditionally had to apply for grants and that many (for example in the US) still do not need to. They also had worries not expressed by respondents from other disciplines, including about putting ideas into the hands of reviewers who could 'steal' them. They also felt that in general they do not require a large amount of funding to do their work, therefore if they have a very good idea they would not be willing to wait a year to get funds for a project before working on that idea.

In other examples, one UGC-sector researcher felt that different disciplines require different amounts of money to conduct their research, so funding should not be split equally between disciplines or between grants. Another noted that for many humanities and social sciences researchers it is time rather than money that is needed. Six UGC-sector researchers also noted that they felt the current set-up is based on a 'science model' and this can be unfair to humanities. For example, respondents said that it is not possible to have purely creative projects and that assessment of projects is based largely on publications, which may not be an appropriate output for humanities projects.

Societal impact and industry engagement

In the consultation, association/foundation and government respondents all commented on the academic focus of the RGC, suggesting that there should be more focus on societal impact and less on academic indicators such as publications and grant success. One respondent commented that there is currently no linkage between the academic research conducted and real-world opportunities. To address this and promote collaboration between academics and industry, another respondent suggested that the RGC could have two elements: a research funding organisation providing funding for the basic and applied research needs of universities, and a technology transfer office focused specifically on driving technology transfer and research collaboration between industry and universities. A government respondent also suggested that the RGC could consider seeking views from government bureaus/departments when developing/reviewing schemes aimed at local needs (such as the TRS) and encouraging applicants to seek

[186] Substantiation is the terminology used in the Hong Kong system for tenure.

these views when preparing research proposals, in order to maximise the operational benefits and application values of the research funded.

Value of funding available

A large number of researchers (47 UGC-sector researchers, 1 self-financing sector researcher, 11 panel members) said that they felt the overall size of the funding pot is too small and limits the international competitiveness of the Hong Kong research system. This was the second most mentioned topic for UGC-sector researchers in the open-ended questions. It was suggested that having too small a pot, which is very competitive, could constrain promotion and contract renewal opportunities for the majority of academics, potentially leading to a brain drain. On the other hand, in the consultation, respondents from associations/foundations expressed concern that the current size of the pot was not sufficient for building critical mass, and that this can lead to research fragmentation. One consultation respondent suggested that the government should aim for public research spending of 1 per cent of GDP (in part distributed through the RGC) in order to catch up with regional competitors. A number of researchers and panel members felt that the RGC should ask for more money from the government, and some noted that they were unclear on whether the RGC is already doing this or not. Twenty-three UGC-sector researchers and seven panel members commented specifically that individual grants are too small, particularly from the GRF scheme, and that can limit what is possible with the funding available. Five respondents also said that GRF grants in particular are too short. Six UGC-sector researchers and two panel members identified a need to increase the number of projects funded, particularly for the GRF. One panel member said that it would be useful to know whether the strategy is to spread thinly or to fund fully.

Use of RGC success as a mechanism for promotion and recognition

Twenty-five UGC-sector researchers and one panel member commented on the role that RGC grants, particularly GRF grants, play within the overall funding system, and the difficulties this can cause. A number of respondents felt that RGC grants, particularly GRF grants, are used as the sole criterion for promotion. This was due to the number of successful RGC grants being used in part of the calculation of the R-portion of the portion from UGC for each university. Four researchers and one panel member noted that the use of GRF in consideration for promotion means that staff are required by their institution to apply for grants on a yearly basis – even if they do not need the grant – which they said can lead to inefficiencies. One researcher also noted that as the success rate for grants varies between disciplines, the tie with promotion means that there is not equality between disciplines in terms of promotion.

The other topics from the questions in Figure 35 were not mentioned in open-ended questions in the consultation. However, many respondents suggested other schemes, or adjustments to current schemes, that they felt would benefit Hong Kong. In particular, self-financing sector researchers said they would like access to grants that encourage collaboration, both within Hong Kong and abroad. One also suggested a scheme similar to one reported in Australia, where there is support for collaboration between academic institutions and the non-profit sector in order to encourage knowledge co-production to match the needs of the non-profit sector. RGC sector researchers and panel members suggested broadening the range of schemes to have both a smaller scheme than GRF which would allow researchers to carry out

shorter, lower value projects that are not as competitive as big projects in the GRF application, and larger schemes which encourage more innovative and risky projects which can be carried out over a longer duration.[187] Both researchers and panel members suggested having schemes similar to the HKPFS but for postdoctoral researchers. Panel members also suggested further bilateral research schemes with foreign countries, building on the current JRS, to promote collaboration.

B.2.3. Other sources of funding

When asked about other sources of funding, 40 per cent of UGC-sector researchers and 18 per cent of self-financing sector researchers reported having funding from sources other than their own university and the RGC. For the UGC-sector researchers, 60 per cent of these researchers had funding from other government funding sources such as the Innovation and Technology Commission, the Health and Medical Research Grant and the Environmental Conservation Fund; 32 per cent had funding from international funding sources, the majority of which are based in China; and 6 per cent had funding from local foundations or companies. For the self-financing sector researchers, all had funding from other government sources and one also had funding from mainland China.

B.2.4. How the UGC has enabled researchers

When asked if RGC funding had enabled researchers to develop their work and career beyond the lifetime of the individual grant or project, 50 per cent of respondents who answered the question felt RGC funding had a positive impact on their career (Table 26).[188] The most common benefit was leading to further research project and ideas, followed by enabling particular research projects to be carried out – particularly those of larger scale or longer duration – and a general development of research profile and track record, which allowed researchers to be successful and productive going forward.

[187] The AoE Scheme and TRS do currently aim to encourage this.

[188] 289 out of 578 respondents.

Table 26: Ways that RGC funding facilitated careers of individual researchers[189]

Ways that RGC funding facilitated careers of individual researchers	Number of respondents
Leading to further research projects and ideas	66
Enabling particular research projects – e.g. large-scale or longer-duration ideas	51
Developing research profile and track record	48
Facilitating collaboration with other researchers, institutions or stakeholders	42
Developing infrastructure through providing resources which can be used after the project	21
Developing skills and expertise	15

B.2.5. Collaboration

The UGC sector has three RGC schemes which specifically aim to increase collaboration: the Collaborative Research Fund (CRF), Areas of Excellence (AoE) Scheme, and Theme-based Research Scheme (TRS). Respondents to the UGC-sector survey and the panel survey were therefore specifically asked whether they agreed that these schemes promoted collaboration among researchers: within institutions, between institutions, between disciplines, within Hong Kong, and internationally (Figure 36).

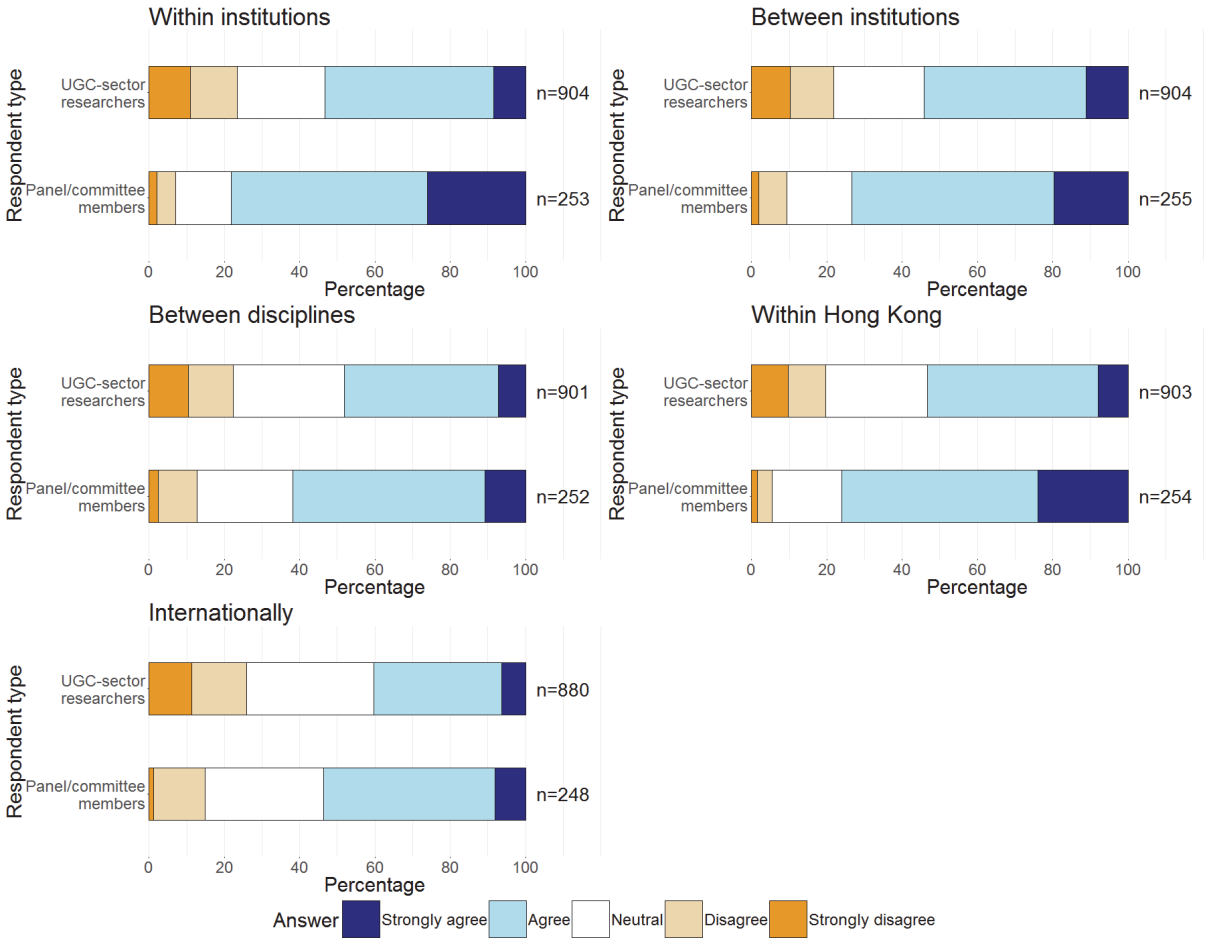
There were generally positive responses to the survey questions about the level of collaboration that resulted specifically from these funding schemes. As above, panel/committee members responded more positively to all of these statements than researchers. Over 50 per cent of researchers and 70 per cent of panel/committee members agreed that these schemes promote collaboration within institutions, between institutions, and within Hong Kong (Figure 36a, b and d). Both researchers and panel/committee members agreed to the least extent with the statements about promotion of collaboration internationally (40 per cent and 54 per cent agreed, respectively, Figure 36e), and collaboration between disciplines (48 per cent and 62 per cent agreed, respectively, Figure 36c).

Despite the relatively positive responses to the questions about collaboration, some survey and consultation respondents commented on problems they perceived with the collaborative schemes. Five survey respondents and two consultation respondents noted that they felt that the collaborative research grants are only for senior researchers, and that it would be useful if there was a smaller-scale grant, similar to the CRF, which encourages smaller-scale collaborations. A number of respondents commented that they were not sure that these collaborative grants really made collaborations happen in practice. These concerns were particular aimed at the AoE Scheme and the TRS, which six respondents suggested

[189] Some respondents described multiple impacts; these respondents have been counted for each impact type they mentioned; some respondents also said that the RGC funding had facilitated their research career, but did not describe how.

scrapping because they felt the schemes are inefficient and give money to researchers who can already have money. To explore this issue, these respondents felt that it would be useful to compare the output of these grants in comparison to the GRF in order to understand the added benefit of the higher level of funding.

Figure 36: Survey respondents' opinions on the promotion of collaboration by RGC collaborative schemes



B.2.6. Research support

When asked to select up to three types of research support that are most important for research, the majority of respondents selected research support and technical staff (Figure 37 and Table 27). For the self-financing sector the second most popular category was relief teachers, which possibly reflects their higher teaching load and the fact that there is a limit to the teaching relief that can be applied to any individual grant. For UGC-sector researchers the second most popular category was conference expenses, which also was the third most frequently selected category for the self-financing sector. For panel/committee members the second most popular category was equipment. The third most selected category was travel and subsistence for UGC-sector researchers, and consumables for research work for panel/committee members.

Figure 37: Respondents' views on prioritisation around research support that should be provided by the RGC

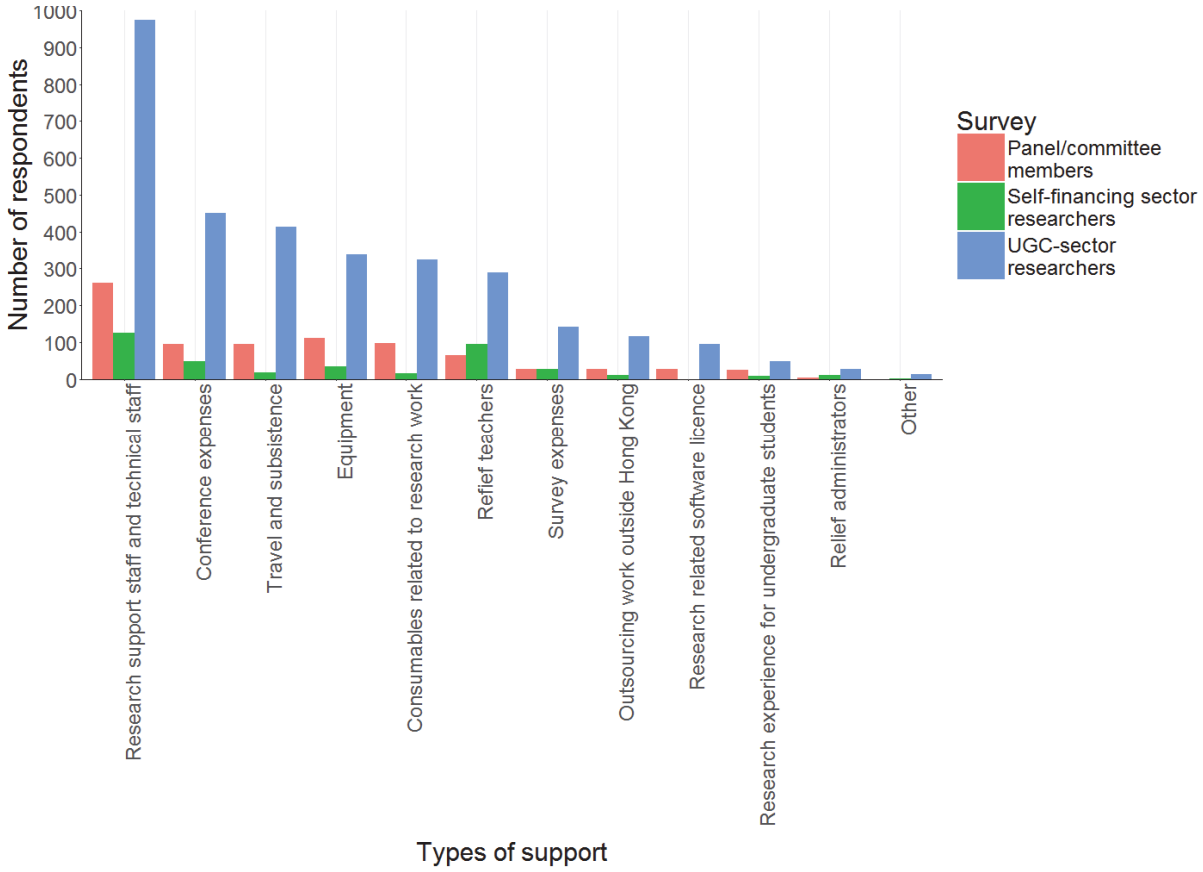


Table 27: The top 3 most selected types of research support for each respondent type

Respondent type	First	Second	Third
Panel/committee members	Research support staff and technical staff	Equipment	Consumables related to research work
Self-financing sector researchers	Research support staff and technical staff	Relief teachers	Conference expenses
UGC-sector researchers	Research support staff and technical staff	Conference expenses	Travel and subsistence

When asked about types of research support not currently provided by the RGC that would be useful, a large variety of answers were given in the open-text box. It is difficult to generalise these as different support is provided from different schemes. However, overall there is a desire for greater teaching relief and more covering of travel expenses and conference travel. Other areas highlighted included field expenses, such as subsistence and research participant expenses/honoraria which are not always covered. Another common category was resources and equipment, such as high-powered computers and cloud computers for big data research. However, some even requested standard ICT equipment, and some items

which are traditionally the responsibility of the host institution, including: reference books, mobile devices, work stations, space (such as laboratory and animal facilities) artistic materials and software.

Research support was also mentioned in other open-ended questions and consultation; these comments all had a focus on a need for more flexibility in the use of funding (12 UGC-sector researchers, 2 self-financing sector researchers). In particular, researchers noted that they found it difficult to predict at proposal stage exactly what money would be used for but when awarded it was difficult to move the money to other items when carrying out the project.

B.2.7. Assessment criteria

When asked to select up to five criteria they felt should be used in the assessment of grants, the most frequently mentioned across all types of respondents were academic merit and originality (Figure 38). The third most frequently selected criterion for UGC-sector respondents and panel/committee members was track record, whereas researchers in the self-financing sector selected benefit to society (which links to local relevance, which was not in the top five criteria selected by any other type of respondent) (Table 28).

Figure 38: Survey respondents' views on the criteria which should be used in the assessment of grants

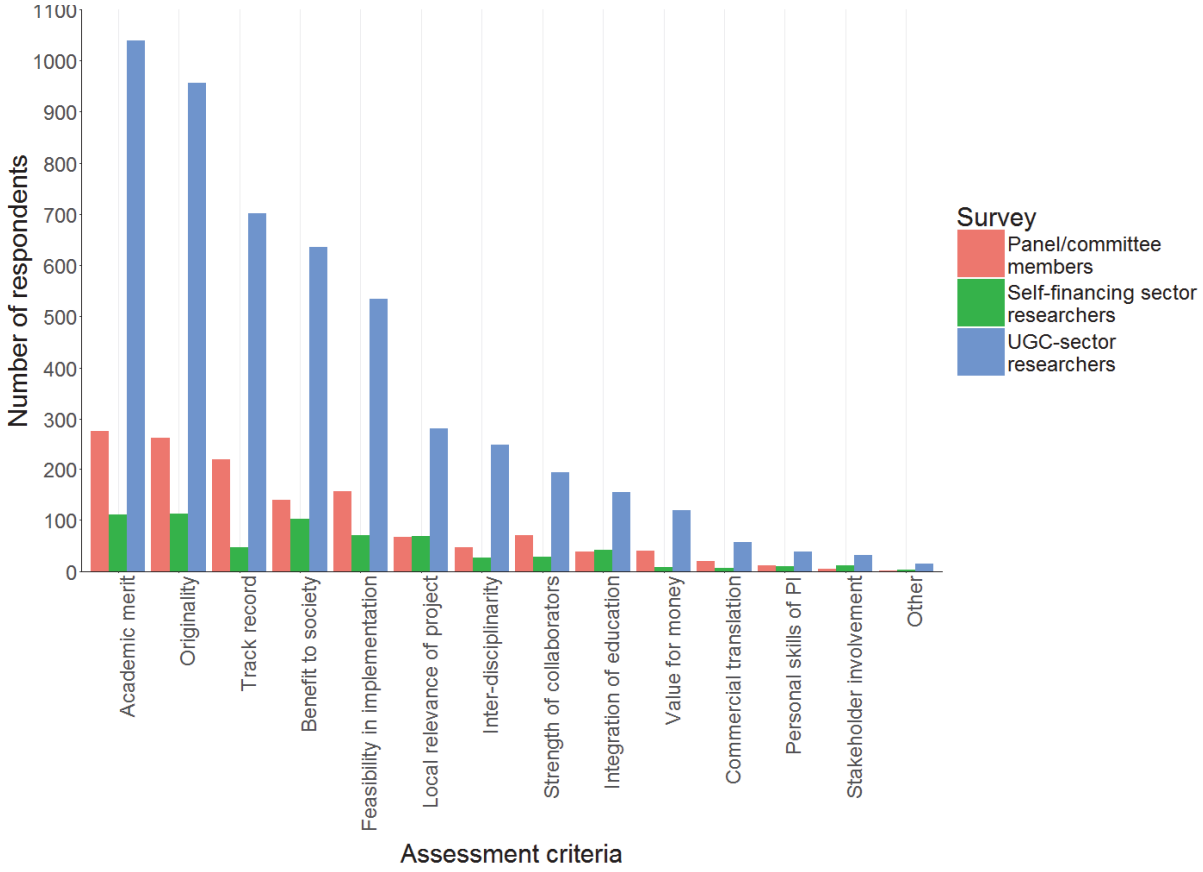


Table 28: Top five most selected assessment criteria for each respondent type

Respondent type	First	Second	Third	Fourth	Fifth
Panel/committee members	Academic merit	Originality	Track record	Feasibility in implementation	Benefit to society
Self-financing sector researchers	Originality	Academic merit	Benefit to society	Feasibility in implementation	Local relevance of project
UGC-sector researchers	Academic merit	Originality	Track record	Benefit to society	Feasibility in implementation

In open-ended questions, 12 UGC-sector researchers and 8 panel members mentioned assessment criteria. Mixed views were expressed as to which of the criteria are the most important, with seven UGC-sector researchers and three panel members noting they felt the emphasis on track record should be reduced as it does not encourage innovation or original ideas, whereas other criteria such as originality, scientific merit, innovation or societal benefit should be placed more highly. Five other UGC-sector researchers and four panel members thought that track record should be the most important criterion, and perhaps the only criterion.

One UGC-sector researcher thought that criteria of local relevance and benefit to society are difficult to assess in practice because it is not necessarily clear what the needs and priorities of Hong Kong are and different assessors may have different interpretations of those needs. In addition, they thought that in some fields it is not possible to be both locally relevant and academically excellent. Another felt that the current system discourages research about Hong Kong as reviewers do not consider such work to be 'excellent'.

Researchers from the self-financing sector thought that in their sector, academic track record should not be weighted too highly and that the requirements/expectations of the academic merit criteria should be different, reflecting the expectation of a different quality of publications.

B.2.8. Hong Kong PhD Fellowship Scheme

A subset of questions in the survey asked about experience of the Hong Kong PhD Fellowship Scheme (HKPFS). Among UGC-sector respondents, 273 said they had experience of the scheme, either through supervising a student on the scheme or having themselves been a student funded this way, and answered this subset of questions.

In general, there was a high level of agreement with the statements presented about the schemes (Figure 39). Respondents agreed most strongly with the statements that the HKPFS enhances cultural diversity (69 per cent) and that its value and types of support are appropriate (69 per cent). There was also a high level of agreement with the statements that the HKPFS has appropriate terms and conditions (65 per cent). Only two statements had less than 50 per cent agreement, namely:

- The HKPFS has the correct mix of local and non-local students (38 per cent agreement, 38 per cent disagreement).

- The HKPFS has the right balance of disciplines (37 per cent agreement, 25 per cent disagreement).

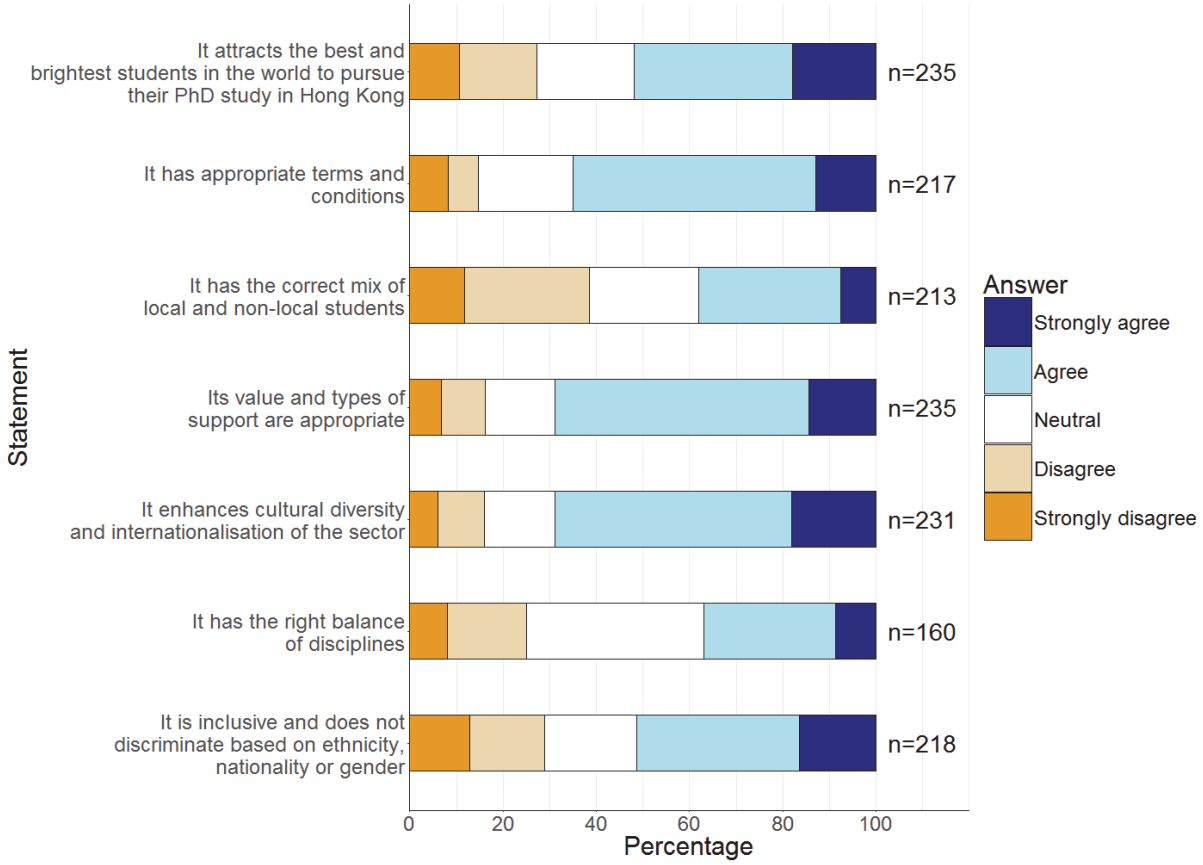
Opinions on whether the HKPFS attracts the correct mix of local and non-local students seem to be connected to opinions on attracting the best and brightest students in the world to pursue their PhD study in Hong Kong. Seventy-five per cent of those that agreed that the mix of local and non-local is appropriate also agreed that the HKPFS attracts the best and the brightest students to Hong Kong, while only ten per cent disagreed.

When comparing perceptions of other funding schemes available to researchers (Figure 35a), the HKPFS is seen as less inclusive (Figure 39). Of those that thought that the HKPFS is not inclusive, 28 per cent also thought that the current grant funding schemes are not inclusive, whereas 56 per cent thought that they are (Figure 35a).

In open-ended questions, respondents questioned the criteria for selection of HKPFS students, particularly the scores that applicants receive for cultural diversity. One panel member and one UGC-sector researcher noted that this criterion discriminates against local and Chinese applicants, and that the primary criterion should be research excellence. However, another noted that as many of the students are from mainland China, the scheme is not necessarily fostering internationalisation.

Two researchers raised concerns about the stipend of the HKPFS. These concerns all focused on inequalities: inequality between students as those not on the HKPFS receive less funding, inequality between universities as some universities were reported to top up the stipend to attract the best students, and inequality between seniorities as many postdoctoral researchers were reported to earn roughly the same as the HKPFS students. Finally, three researchers commented that the current length of the scheme, at three years, is not sufficient to complete a PhD and that more years of support should be provided. Further work would need to be carried out in order to compare this PhD scheme with PhD schemes in other countries.

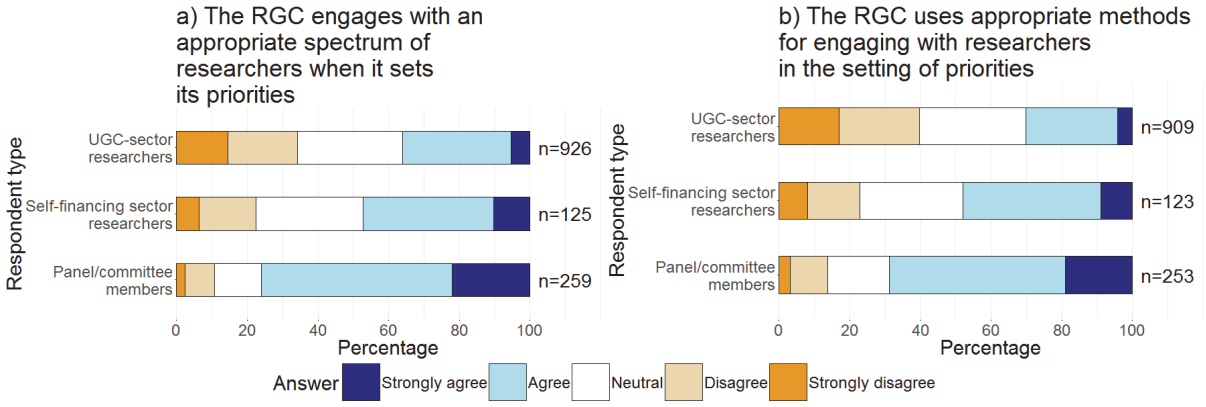
Figure 39: Survey respondents' opinions on aspects of the HKPFS



B.2.9. RGC priorities and priority setting

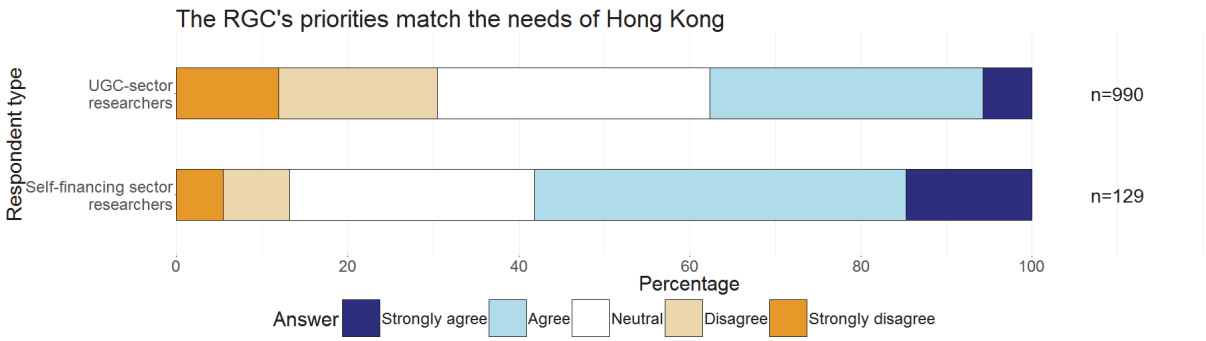
We also asked for opinions on the RGC's strategic priorities and approach to priority setting. When asked about engagement of researchers in priority setting and methods for engagement in general, self-financing researchers and panel members agreed that the engagement and methods used by the RGC are appropriate (Figure 40). Only 36 per cent of UGC-sector researchers agreed that the spectrum of researchers engaged with is appropriate (though this was still a higher number than disagreed with the statement) (Figure 40a). However, when asked about the methods for engagement, more UGC-sector researchers disagreed than agreed with this statement (39 per cent disagreement, 30 per cent agreement) (Figure 40b).

Figure 40: Survey respondents' opinions on engagement of researchers in RGC priority setting



Researchers were also asked whether the priorities of the RGC match the needs of Hong Kong (Figure 41). Thirty-eight per cent of UGC-sector researchers and 58 per cent of self-financing sector researchers agreed with this statement; 31 per cent of UGC-sector researchers and 13 per cent of self-financing sector researchers disagreed. These responses are similar to when researchers were asked if the funding schemes meet the needs of the research community (Figure 35g: UGC sector 35 per cent agreement, 39 per cent disagreement; self-financing sector 56 per cent agreement, 19 per cent disagreement).

Figure 41: Researchers' opinions on the priorities of the RGC



RGC strategy was only mentioned in open-ended questions a handful of times. One panel member noted that it is not clear whether or how research priorities are identified, suggesting a research strategic planning process may be useful. Another suggested that RGC could get more feedback from communities than it currently does. One self-financing sector researcher also noted a desire for a more open and engaged mechanism for the RGC to involve academics in discussing the research agenda of local relevance in Hong Kong, mainland China and the region.

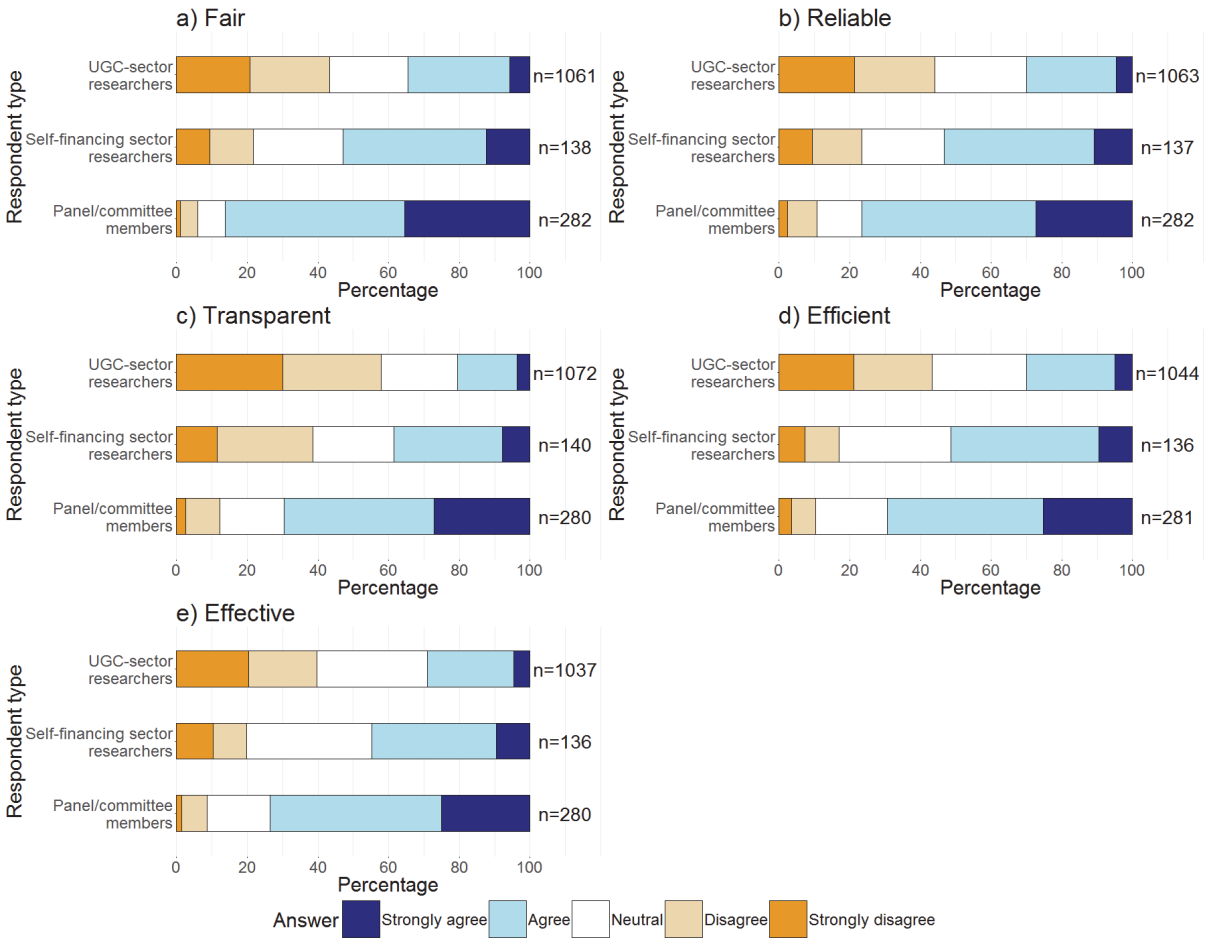
B.2.10. RGC grant application and review process

All surveys asked respondents about the extent to which they agreed that the RGC grant application and review process is fair, reliable, transparent, efficient and effective (Figure 42). Across all respondent types, the highest level of disagreement was with the statement that the RGC grant application process is transparent (Figure 42c). This opinion was strongest among UGC-sector researchers, of whom only 20

per cent agreed and 58 per cent disagreed. In the self-financing sector survey the same number (37 per cent) agreed as disagreed, and in the panel/committee member survey there was more agreement with the statements than disagreement.

On the other statements, panel/committee members responded the most positively, with more than 65 per cent agreeing with each statement, and fewer than 12 per cent disagreeing with each statement. Approximately 50 per cent of self-financing sector researchers and 30 per cent of UGC-sector researchers also agreed with these statements. Across disciplines, respondents from physical sciences had the highest percentage of agreement and the lowest percentage of disagreement for all of these statements.

Figure 42: Survey respondents' opinions on the RGC grant application and review process



Looking across all Likert scale questions, we can see that knowledge of the RGC systems varies across career stage. Table 29 shows that the average percentage of 'don't know' responses across all questions is highest for Assistant Professors, and lowest for Chair Professors. This is true in both the UGC sector and the self-financing sector, although it should be noted that in the self-financing sector the sample size is much smaller. In line with the increasing perception of transparency that comes with closeness to the process (as expressed by panel members), this suggests that through time and experience of the RGC and its associated funding schemes, researchers gain an understanding of the system.

Table 29: Percentage of 'don't knows' across all Likert scale questions for different career grades

Career stage	UGC-sector researchers	Self-financing sector researchers
Assistant Professor	20.3%	19.3%
Associate Professor	16.3%	17.0%
Chair Professor/Professor	11.4%	8.8%

When asked in the survey what they would recommend to the RGC from other funding systems and why, 12 panel members and 3 researchers commented that they felt the RGC compares well to other systems they know of, with 7 of these panel members and 1 of the researchers describing it as better than other funding bodies. This included comparisons with UK funding bodies, and the NSF and NIH. On other open-ended questions in the survey, 11 panel members and 10 researchers commented that they felt the RGC is effective, fit for purpose and works well for Hong Kong.

Transparency

However, many researchers did comment on issues with the RGC application and review process. Lack of transparency was the issue mentioned the most by UGC-sector researchers in open-ended questions, particularly the question asking if there was anything else that should be considered in this study (59 UGC-sector researchers). Concerns about lack of transparency spanned the whole review process and included a lack of understanding of:

- How proposals are matched
- What the appeal procedure is
- What the background of the reviewers is
- How panel members produce final scores
- How the rating and weighting works
- How/why cutting of budgets happens
- How are panel members selected
- What feedback should be received from the panel.

Two self-financing researchers also mentioned transparency, as did three panel members. The panel members commented in particular on ways the system could be made more transparent, for example by having clear rules on the length of time that panel members and reviewers can serve, or by making the individual scores available to applicants alongside the final score and a justification of the score and decision. While the majority of comments about transparency were negative, two UGC-sector researchers commented that they felt the system was transparent and fair. Lack of fairness and reliability were also mentioned by 14 and 2 UGC-sector researchers respectively.

Efficiency

Efficiency of the process was also mentioned in all surveys. The efficiency issue mentioned the most by UGC-sector researchers was the turnaround time from the submission of a proposed study to the time it is approved (38 UGC-sector researchers, 1 self-financing sector researcher, 3 panel members). Researchers commented that it often takes over a year from submission to receipt of the money. This was reported to lead to some researchers not submitting their best ideas, as they feel they cannot wait that long. Researchers also said that if turnaround time was reduced then researchers could start working over the summer when they do not also need to teach. A number of UGC-sector researchers stated that turnaround time is particularly problematic for business studies researchers, who often do not need a large amount of money, and whose ideas may no longer be current and worth exploring once the grant has been won.

The efficiency issue mentioned most frequently by panel members was the fact that there is only one funding cycle a year for each grant scheme. Twenty-one UGC-sector researchers and six panel members felt that there should be multiple grant cycles a year. The NIH and NSF in the US were both reported to have more than one round of funding a year. Four UGC-sector researchers and one panel member also commented on inefficiency caused by not being able to work on projects while they are in review, noting again that this can cause researchers not to submit their best ideas.

Two panel members also suggested that the practice of cutting budgets can lead to inefficiency as it means that, for applicants to get enough money, they have to apply every year. These panel members also argued that budget cuts can necessitate changes to the project itself, resulting in additional administrative burden.

A potential solution to perceived inefficiency, put forward by UGC-sector researchers and panel members, is to limit the number of projects that colleagues are able to hold at the same time. Respondents also suggested this would allow for each grant to be larger. Respondents gave a number of examples of funding bodies that limit the number of grants that an individual can hold, including the NSF (US), the ARC (Australia), the NSFC (China), and the NSERC (Canada).

Reviewers

The review process was regularly mentioned in the open-ended questions. The topic mentioned most frequently by researchers, both in the UGC sector and self-financing sector, was the quality of reviews received (55 UGC-sector researchers, 5 self-financing sector researchers, 7 panel members). Many researchers gave examples of reviews they considered to be bad quality, containing unjustified and superficial comments or carried out by reviewers they did not consider to be experts in the topic. Researchers suggested a number of ways to improve the quality of reviews, such as keeping an updated database of reviewers including comments from applicants and panel members on review quality, or providing improved guidelines to reviewers to ensure they understand the scheme and the review parameters (further examples provided in Box 2). Concerns about bad reviews stemmed particularly from an idea mentioned by a number of respondents, both panel members and researchers, that ‘one bad review kills a proposal’.

Box 2: List of suggestions to improve review quality[190]

- Allow applicants/panel to comment on whether reviewers are qualified to rate the application
- Ensure panel members read reviews carefully and weed poor-quality reviews out
- Provide better instructions to reviewers to ensure they understand the requirements of the grant
- Evaluate reviewers
- Ask reviewers to say whether or not they are experts
- Make the list of reviewers public
- Ignore extreme reviews (good and bad)
- Blacklist bad reviewers
- Have reviewers meet and discuss their reviews
- Hold reviewers accountable for bad reviews
- Pay reviewers
- Include evaluation of reviewer scores in panel comments
- Require reviewers to say if they received assistance
- Screen pool of reviewers.

In the consultation, foundations, associations and government respondents commented that the use of international expertise, through international reviewers and international panel members, should be continued as it adds value and 'integrity'. A number of researchers and a small number of panel members commented on potential conflict of interest problems with local reviewers, such as giving very negative scores (20 UGC-sector researchers, 3 self-financing sector researchers, 2 panel members). However, a small number of researchers felt that for some topics, for example those where the experts are local, it was more appropriate to have local reviewers than external reviewers. Panel members commented on the difficulty of finding the experts and getting them to be reviewers, and suggested that increasing the stipend or letting the reviewer know the outcome of the application process might help improve the rate of agreement to carry out reviews.

The most common suggestion for improvement, which was mentioned by both researchers and panel members, was to allow researchers to respond to reviewer comments within the grant round (11 UGC-sector researchers, 7 panel members). It was suggested that this could take the form of a right to reply, similar to systems respondents reported exist in the ARC (Australia) and the EPSRC (UK).

A number of researchers commented that it is unfair that the number of reviewers each application receives varies. They generally felt that the more reviews an application received, the more likely it was that there would be one bad one which would lead to the project not being funded. Two respondents suggested that regardless of how many reviews are received, only three should be used, with the highest and lowest scores removed if there are more than three. Four researchers also commented on resubmission and difficulties if different reviewers are assigned.

[190] Each suggestion was made by at least one respondent; suggestions are not in any particular order.

A number of researchers (31 UGC-sector researchers, 2 self-financing researchers) commented that they felt the review process should be double blinded to ensure fairness in judgment; however, this point was not raised by any panel members.

Panel membership

As well as reviews and reviewers, many respondents commented on panels and the panel members. The most common concern around panels for UGC-sector researchers and panel members was broadness of areas covered by the subject panels, which they argued leads to difficulty in ensuring there are panel members with sufficient expertise for all proposals that are submitted (20 UGC-sector researchers, 4 panel members). Researchers felt that there was not sufficient coverage of all disciplines, with one noting that some panels currently include multiple members from the same field, meaning there is limited diversity of expertise. One researcher noted that in the NIH the subject areas covered by panels are less broad. A small number of respondents (seven UGC-sector researchers) commented that as the current panels are split by discipline, interdisciplinary research which does not fall well within the remit of any of the panels can be put at a disadvantage.

Similar to reviewers, researchers were worried that local panel members may have a conflict of interest, and felt that either they should not be used or the ratio of non-local to local should be increased (13 UGC-sector researchers, 2 panel members). Four researchers specifically mentioned that they felt that applicants for grants should also be panel members. However, again, three researchers and one panel member noted that local members do have value as they know more about the Hong Kong system than non-local members. One researcher mentioned that in the NSFC (China) local panel members are not allowed to select reviewers; another noted that in the US reviewers and panel members are not also allowed to be applicants.

Panel/committee members were also asked whether the RGC should continue to delegate proposal assessment to committees/panels (Figure 43). Ninety-four per cent of panel/committee members agreed that the delegation of proposals should continue (50 per cent of these strongly agreed). When asked their opinion on the current measures guarding against conflict of interest, over 80 per cent of respondents agreed that the current measures guarding against conflict of interest are appropriate, with fewer than 10 per cent disagreeing (Figure 44).

Figure 43: Panel/committee members' opinions on the delegation of proposal assessment

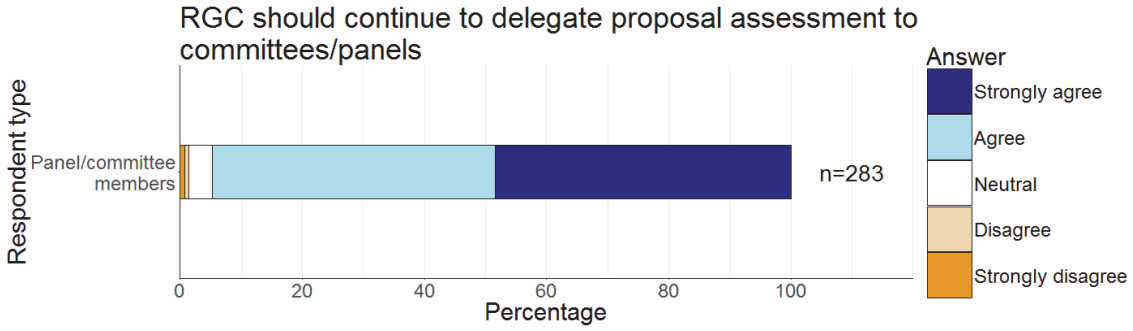
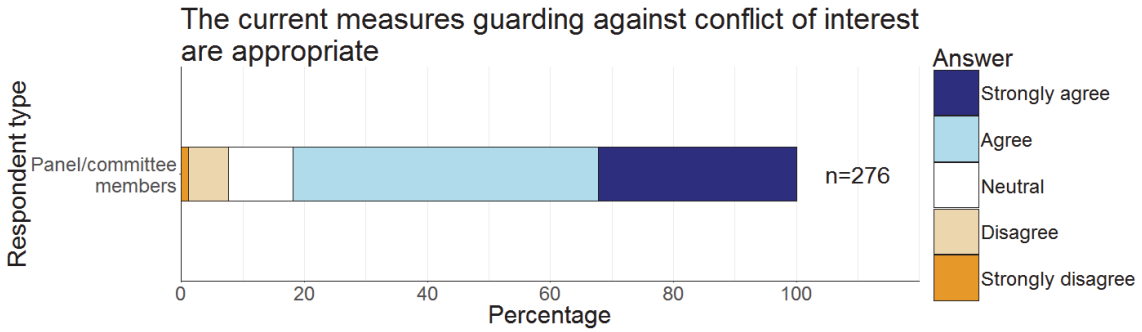


Figure 44: Panel/committee members' opinions on the current measures guarding against conflict of interest



How members of panels are chosen was also noted as a point of confusion for both UGC-sector researchers and panel members. Six UGC-sector researchers and two panel members commented on issues of clarity, transparency and fairness as to how panel members are chosen. Two researchers and a panel member said that it is unfair that only full professors can be panel members, and that it would be fairer if all tenure-track PIs were eligible for panel membership. On a related point, it was reported that all researchers who are eligible to apply are also eligible to serve on panels in the NSF, implying that all eligible applicants are senior enough to be panel members. A panel member also noted that only overseas panel members are paid, which they felt to be unfair. Three researchers also expressed a lack of clarity over the rules for length of panel membership.

Some panel members made specific mention of the panel meetings. This included suggesting that each panel member has too many proposals to look at, panel meetings are too rushed, and more time could be spent evaluating and discussing each proposal. It was suggested that teleconferencing could be used in addition to the face-to-face meetings, and one respondent said that face-to-face meetings could be scrapped entirely.

Three respondents from the self-financing sector noted that they felt the panels did not fully understand the differences between the self-financing sector and the UGC sector, such as the funding that institutions would themselves invest in projects, and the aims of the schemes for the sector.

RGC membership

Three panel members and two UGC-sector researchers commented that the chairman should not be an active administrator from a UGC institution due to conflict of interest. It was suggested that members of the RGC could be elected by the academic community instead of appointed by the Education Bureau.

Scoring and decision making

Three panel members commented that there is not a clearly defined process by which panel members combine reviewer scores. This was viewed by one respondent as panel members having too much power. Two UGC-sector researchers noted that they feel that scores are downgraded to 3.5 if there is not money left for a proposal to be funded, rather than leaving them at 4 and not funding. In addition, there was concern about whether the scoring structure and implications are understood by reviewers – particularly those from overseas. As one UGC-sector researcher noted, ratings of 'good', 'very good' and 'excellent' can have different meanings to different people.

Eleven researchers commented on the level of power that they feel panel members have relative to the weight placed on the reviewers' scores. These researchers felt that reviewers' scores should be more important than panel members' opinions, and that panel members should have to justify any downgrading of the scores. On the other hand, a number of researchers commented on the need for panel members to carefully consider the validity of reviews and remove poor reviews. One also commented that outlier reviews should specifically be discussed in panel meetings. Related to this, one panel member noted that it can be difficult within panel meetings to stop panel members providing input on proposals on which they have little expertise.

Three researchers also mentioned not understanding how budget cuts are decided, suggesting that more feedback should be provided to explain it. One panel member commented that it was inappropriate for non-local reviewers to be asked to cut budgets as they may not have a full understanding of the funding system in Hong Kong.

Appeals and resubmission

Twenty-nine UGC-sector researchers, three self-financing sector researchers and a panel member commented on the fact that there is no appeal system. One researcher commented that university researchers are not able to directly contact the RGC. Instead of an appeal system, it was suggested, as noted above, that this could take the form of a right to reply, similar to systems respondents reported exist in the ARC (Australia) and the EPSRC (UK). A UGC-sector researcher and a panel member suggested that a right to reply system would mean not necessarily waiting a whole year before resubmitting.

Processes

A number of researchers and panel members commented on the high level of bureaucracy in the system, suggesting that it could be reduced. Twenty-four UGC-sector researchers commented that they do not find the online system user-friendly, while five UGC-sector researchers commented that preparing grant applications, including physically carrying out the submission, is very time-consuming. A number of improvements were suggested, and are detailed in Box 3.

Box 3: Suggestions for improvements

Suggestions for improvements for the benefit of applicants:

- Do not make applicants list all their ongoing, submitted and completed projects
- Store data from previous grant applications in a form that can easily be reused, so that applicants do not have to start again from scratch
- Make declarations less complicated
- Remove unnecessary/blank pages on the submission system
- Allow applicants to check the status of applications.

Suggestions for improvement for the benefit of panel members:

- Only have one mode of requesting reviews
- Allow trivial budget changes to be made without approval
- Have a standard format for CVs to make them easier to compare.

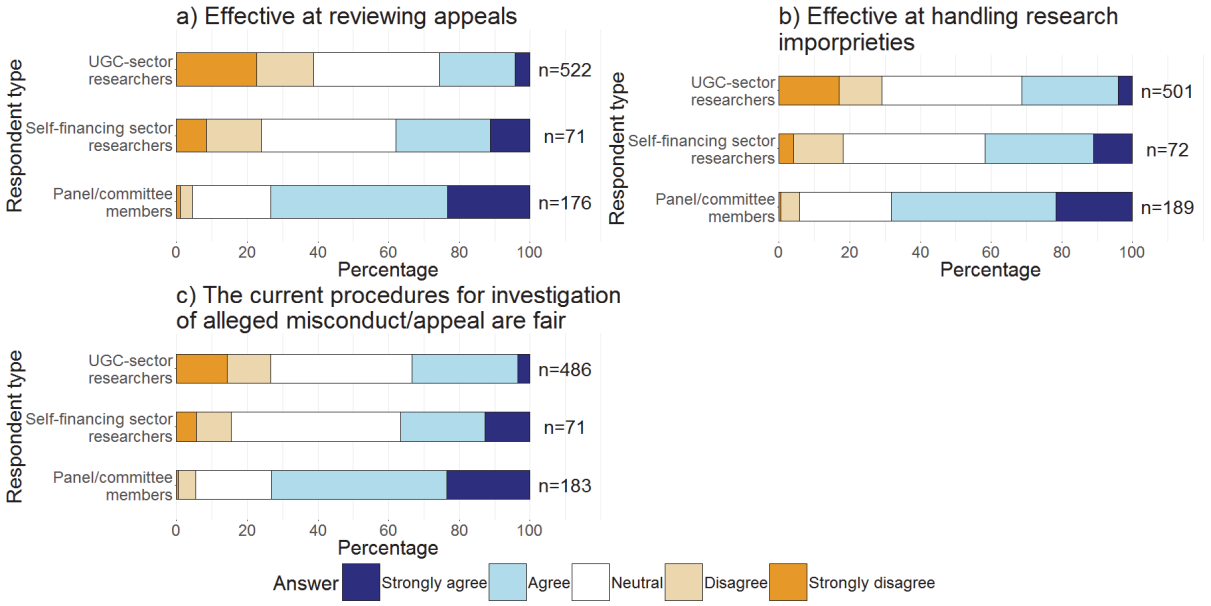
Five panel members also commented on the requirement for them to review projects once they have been completed (and also in some schemes midway through projects). They felt that this process did not necessarily add value, and that it may be better for RGC to retain its own scientific programme managers to monitor and manage ongoing projects. One also commented that panel members often don't know that reviewing projects will be one of their duties.

B.2.11. Disciplinary Committees

Respondents were also asked to state the extent to which they agreed with the statements about the DCs of the RGC (Figure 45). Approximately 50 per cent of respondents to these questions selected 'don't know' – over twice as many 'don't knows' as for other questions, perhaps reflecting the fact that this process is only used in a small number of cases.

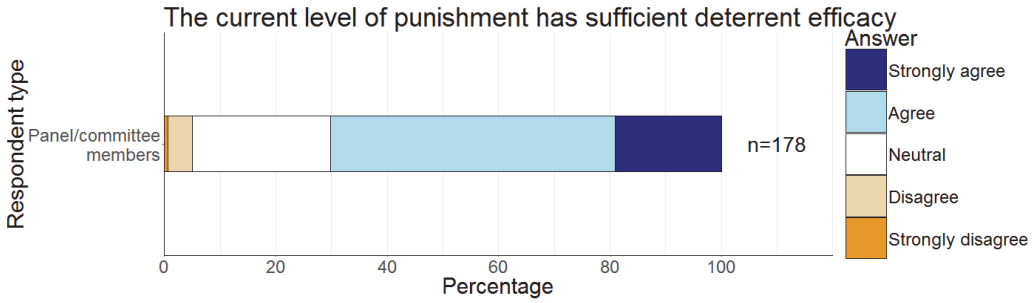
Panel/committee members responded positively to these statements, with at least 68 per cent agreeing with each statement. In comparison, only around half that percentage agreed among researchers, with more than double disagreeing. The highest level of disagreement was on the statement that DCs are effective at reviewing appeals (38 per cent and 24 per cent for UGC-sector and self-financing sector researchers, respectively).

Figure 45: Survey respondents' opinions on the disciplinary committees



Panel/committee members were also asked their opinion on the deterrent effect of the current level of punishment for research improprieties (Figure 46). Seventy per cent of panel/committee members agreed that the current level of punishment is a sufficiently effective deterrent.

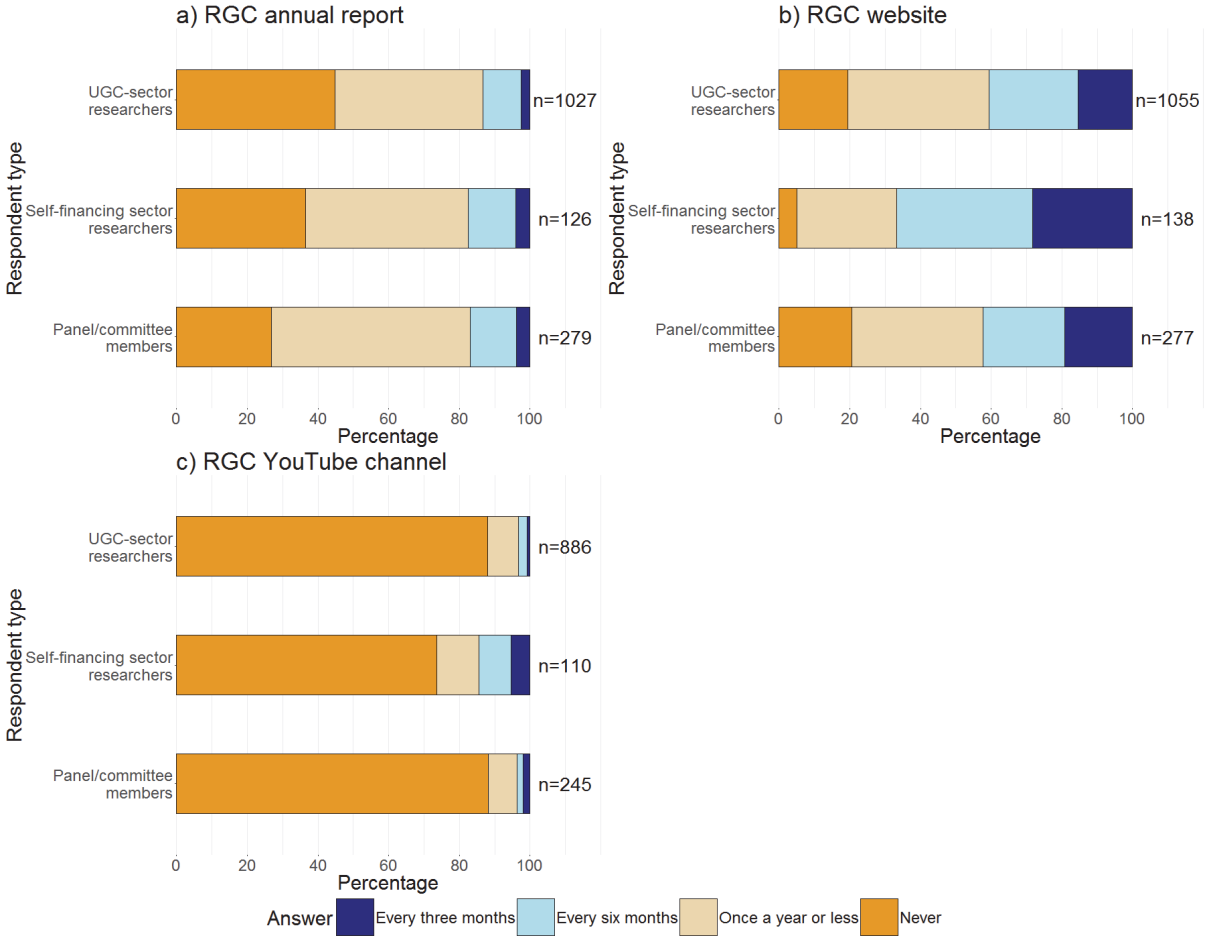
Figure 46: Panel/committee members' opinions on the deterrent effect of the current level of punishment for research improprieties



B.2.12. How researchers and panel assessors/committee members received information about the RGC

All survey respondents were asked how often they utilise the different channels available from the RGC to gain information and insights on the RGC and its activities (Figure 47). Across all respondent types, the RGC website is the source most frequently mentioned, and out of the four options provided, the YouTube channel is the least frequently used.

Figure 47: Survey respondents' frequency of use of RGC resources



B.3. Caveats and limitations

The biggest limitation of this element of our study is the comparatively low response rate from two institutions in our sample, namely HKU and CUHK. However, on analysing the data we do not see a difference in response by institution and therefore believe that this issue is of minimal risk to the quality of our findings. The surveys had response rates of between 11 per cent and 48 per cent, and it is possible that individuals with particular views would be more likely to fill in the survey than others; for example, those with particularly positive or particularly negative views may be more inclined to fill in a survey.

In addition, the individuals who completed the surveys were identified by their institutions as being applicants to RGC schemes between 2011 and 2015. As the institutions used current staff records, the sample is potentially missing (1) academics who have left Hong Kong and (2) academics who have moved institutions within Hong Kong and whose new institution is not aware of the grants for which that the individual has previous applied.

The qualitative results are necessarily based on perceptions and opinions of respondents. As many of the comments were made in response to open questions, the quantification should be taken carefully as it corresponds to the issue most prominent in the respondent's mind at the time of answering, and they may have commented on other aspects if asked specific questions about them. There were five researchers

coding the notes and therefore variations in coding style were visible. We aimed to mitigate the effect of this variation on the analysis through regular meetings to discuss queries and provide an agreed standard of coding practice (see Section B.1.1).

Annex C Results from the focus groups

Face-to-face focus groups were conducted in order to develop a nuanced understanding of the performance of the RGC. They were carried out after the online surveys had closed, and were used to build on the results of the surveys, focusing on questions best explored through dialogue, and in particular on areas where survey respondents disagreed most with statements.

This annex sets out the methodology for the focus groups and interviews, and then describes the findings. The report is structured around the quantitative questions asked in the survey, with the qualitative results from the survey and online consultation provided around these questions as appropriate to add context to the results.

C.1. Approach

C.1.1. Sample of attendees

During the week starting 5 December 2016, 18 face-to-face focus groups lasting one and a half hours each were carried out by the study team in Hong Kong. Through the focus groups we met with 115 people, with an average group size of 6 people. Face-to-face focus groups were carried out with representatives from the following groups:

- UGC sector
    - Researchers who were awarded grants between 2011 and 2015
        - Biology and medicine
        - Engineering sciences
        - Physical sciences
        - Business studies
        - Humanities and social sciences
        - Senior researchers[191]
        - Mid-career researchers[192]
        - Early-career researchers[193]
    - HKPFS

[191] As there are no specific schemes for senior researchers, staff grades were used to select invitees. Staff grades A and B were chosen as proxies for identifying senior staff as they tend to correspond to Professors and Chair Professors.

[192] As there are no specific schemes for mid-career researchers, staff grades were used to select invitees. Staff grade C was chosen as a proxy for identifying mid-career researchers as it tends to correspond to Associate Professors.

[193] The Early Career Scheme was used to select early-career researchers.

        - Administrators
        - Awardees who were awarded fellowships between 2011 and 2015
    - Senior institutional managers of UGC-funded universities
    - Panel members
    - Committee members
- Self-financing sector
    - Researchers who were awarded grants between 2012 and 2015
    - Assessment panel members
    - Institutional managers of HEIs who had received funding since 2012
- RGC members (council members)
- UGC Secretariat.

The UGC provided us with lists of successful applicants for each scheme and panel and council members from which to select participants. From these lists we randomly selected four individuals within the category of the focus group (e.g. discipline, career stage, etc.) from each institution to approach.[194] The spread of individuals was reviewed to ensure a range of HEIs, seniorities and grant schemes were represented (Table 30).[195] For management and administration focus groups, each institution was contacted and asked to send an individual relevant to the theme of that focus group.

Table 30: Number of attendants at award holder focus groups from each HEI

HEI	Number of attendants
CityU	7
CUHK	5
EduHK	9
HKBU	6
HKU	8
HKUST	5
Lingnam	4
PolyU	9

C.1.2. Interviews

The focus groups were conducted by a pair of researchers as semi-structured interviews, and aimed to explore their experiences of the RGC and focus on the current process and what can be improved. The

[194] For panel members we selected non-local members based on availability in Hong Kong, and local members to span across panels.

[195] Once a list of individuals for each focus group was selected, we contacted the institutions to obtain email addresses. In the two instances where the institutions were unwilling to provide us with email addresses, the UGC searched for the email addresses for us and provided us with those that were readily available online.

protocol was developed around areas of interest from the survey and those topics which in our judgement could be best explored through dialogue (see Annex D for full protocol). It was structured around the current funding schemes and the submission and assessment process to cover the following topics:

- Needs of researchers in Hong Kong
- Needs of wider society in Hong Kong
- Submission and assessment process
- Promotion of collaboration
- Research support.

In addition, a virtual focus group was run with the Heads of University from UGC-funded universities, and following this they were given the opportunity to provide comments in writing which have been included in this analysis.[196]

C.1.3. Analysis

Following the site visit, we used notes and audio recordings to write up memos from each interview. These were not verbatim transcripts but detailed descriptions of the discussion. These were uploaded into QRS NVivo 11 software, which was used for the analysis. A total of 19 memos were produced.

In order to conduct the analysis, we developed a code book and assigned recorded statements to different descriptive and analytical categories.[197] The code book included node sets related to the following:

- Parts of the process (priority setting, application and submission, review and award decisions, post award monitoring, appeals and disciplinary);
- Research questions around the needs of researchers and broader society;
- Perceptions of the process (transparency, fairness, reliability, efficiency and effectiveness);
- Generic nodes for capturing interviewee types (discipline, scheme and career stage), HEIs and also positive and negative views expressed by interviewees.

The nodes contained sub-themes, and in total there were 88 nodes in the code book (for further detail see Appendix D). Statements within the interview notes were qualitatively reviewed and coded to as many nodes as applicable. A total of 3,731 phrases were coded in NVivo.

Once all the memos were coded, coding matrices were run across the NVivo data, pulling out comments coded to two nodes to provide a subset of data to review. For example, comments related to the needs of researchers might have been crossed with all data coded to a particular discipline to see if there were similarities or differences across subject areas in the requirements perceived by interviewees.

C.1.4. Confidentiality

To protect the anonymity of our interviewees and ensure confidentiality, data are presented by type of interviewee (e.g. researcher, panel or council member). Where possible we have attempted to provide

[196] These reviews are presented as senior manager views, which also cover data from face-to face focus groups with other senior managers.

[197] This approach follows an analytical process such as that outlined in Bazeley and Jackson (2013).

detail by discipline, part of the sector and career stage. We recognise that HEIs do not have one perspective on the issues discussed and therefore the data cannot be quantified at this level. The advantage of the focus group analysis is that it provides rich detail and nuanced understanding of the different issues from an array of perspectives. Therefore, throughout our analysis, the quantitative data is taken predominantly from the surveys and supported by qualitative information obtained during the site visits.

C.2. Results

C.2.1. Response from the sector to the review and the RGC in general

When conducting the focus groups in Hong Kong, those invited to participate were keen to attend and provide their views. Without being asked, a small number of participants across the majority of the focus groups stressed to us that they were pleased this review was happening. In particular, they felt it was timely to conduct a review and reflect after 25 years, taking into account changes and developments in the Hong Kong and global research systems over time. Participants were eager to provide their opinions and perspectives on how to improve the system going forward, but recognised that incremental improvements were needed rather than an overhaul of the system. As one participant said:

> *GRF serves a good purpose though you can probably fine tune it.*

Although the majority of the discussion was around things which could be improved and the changes which could be made, it is important to note that a number of positive elements of the RGC process were mentioned in all focus groups. A selection of these are highlighted in Box 4.

Box 4: Examples of positive comments made in focus groups about the RGC and its process

- The ability of the programme to meet the needs of researchers, in particular promoting a culture of excellence within universities
- Confidence in the assessment process, in particular its reliability
- Fairness in reviewing created by international assessors
- Academic freedom to suggest research topics
- Volume of researchers supported by the system, compared to funding overseas
- Prestigious nature of RGC funding
- Well-funded nature of some schemes, such as the collaborative one
- Integrity of the UGC as an organisation, and the credit due to the staff working there.

A number of participants stressed the importance of valuing the system in place. For example, when discussing a wish for greater investment, one participant emphasised that the system delivers a lot with the resources available to it:

> *Under the conditions…the system can't do better. The review process is extremely fair and panels do a great job.*

C.2.2. Needs of researchers

When asked whether the funding schemes of the RGC met the needs of researchers, researchers across all disciplines felt it did. The discussion then invariably focused on identifying those needs, and further improvements that could be made to address them.

Value of the funding distributed by the RGC and the value of individual awards

In particular, researchers, university managers and panel members said that the value of the funding available across the system, and in specific schemes, including the GRF and HKPFS was too low. Researchers often cited the percentage of GDP invested in research,[198] expressing concern that this was lower than international benchmarks such as European countries, the US and Singapore, and suggesting that levels should be comparable to other countries in the region such as China, Japan and South Korea, which all invested over two per cent of GDP in 2014.

In particular, researchers and university management and administrators felt that over time the value of funding, across the system and for individual awards, had not kept pace with inflation or reflected the increase in costs such as research assistant salaries. In the case of the HKPFS, administrators felt that this affected the calibre of applicants applying, particularly students from overseas. On the other hand, two individuals who had undertaken the HKPFS felt the value of stipend was higher than other schemes and the value of awards that other PhD students within their institution held.

Researchers felt that the low value of funding has a variety of consequences on the research system. In particular, they argued that it affects the direction of research undertaken in Hong Kong, and the type of research that researchers think it is possible to conduct. For example, one researcher felt that it is cheaper to conduct theoretical work using computational simulations or theoretical algorithms rather than experimental design, and therefore this type of research is easier to fit within the available budget. This point was also made by several panel members. Senior managers felt that the low value of individual awards and the lack of other options to apply for result in individuals applying for funding year on year. Panel members mentioned that the large number of lower-value awards lead to a greater burden on applicants and reviewers. One alternative suggested was to use past performance of an individual as a criterion for funding.

Researchers from business discussed the issue of the value of funding awarded being lower than the value of the funding applied for. It was not clear to these researchers how the decision by the panel to cut the funding allocated was made. Differing understandings included:

- The percentage awarded is related to the score – i.e. 100 per cent funding received for a 5 star proposal, 75 per cent and 50 per cent of funding requested for proposals scoring 4.5 and 4, respectively.
- Those requesting funding for theoretical research receive a lower proportion of funding requested than their experimental colleagues.

[198] Estimates for percentage of GDP invested in research in Hong Kong varied from 0.3–0.8 per cent, indicating a lack of clarity on details, even such as this which are in the public domain.

They stressed that these cuts can lead to difficulties employing postdoctoral researchers or research assistants to conduct the project as more of the grant is required to cover salaries, and that often the same amount of research is expected within a reduced budget. Examples were given where the host HEI provided funding to supplement funds received from the RGC.

A small number of respondents gave anecdotal examples where budgets were deliberately inflated to take into account possible budget cuts, whereas others felt that budgets over a certain size (often given as HK$1m for GRF) would result in the proposal being rejected outright or subjected to larger cuts.

Duration of awards

In some fields of research, researchers felt that the duration of grants awarded was too short. In particular, this was highlighted in focus groups for medicine, business and humanities, as well as senior university managers. Anecdotal examples were given by researchers of individuals applying for funding covering multiple years, which was then reduced to a single year by the panel and funder.

Researchers felt that the consequences of the short duration of funding include difficulty recruiting for ongoing positions, such as supporting PhD students when the initial funding will not cover the full length of training. This was raised as a particular issue for early-career researchers. One participant suggested having a longer timeframe for early-career researchers, and cited the US NSF and NIH as examples of funders that do this.[199] Researchers also felt that the duration of funding affected the type of ideas proposed in grants, as applicants seek to ensure they can be achieved within a few years; in this way, researchers argued that short-term vision limits the aspirations of research.

Researchers also felt that the need to produce at least one paper at the end of each award to be eligible for subsequent funding leads to researchers only publishing incremental advances in research. A panel member mentioned that with shorter duration of funding it may be harder to produce research with an impact or benefit on society.

Looking specifically at the HKPFS, two current students suggested a three-year funding period, with a fourth year of flexibility. They felt that the current system of requiring completion within three years puts too much pressure on students to complete, which risks compromising the quality of work conducted.

It is interesting to note that, as stated above, these comments about the size and value of awards relate particularly to the GRF, whereas other schemes such as the CRF and TRS were perceived as more generous in the value of funding and the outcomes expected for the funding provided.

Number of individuals funded

One researcher from the biomedical area felt the value of awards is not an issue, but that the success rates are.[200] A handful of international panel members highlighted lower success rates in other systems, such as the NSF's 25 per cent success rate compared to Hong Kong's 40 per cent rate. Two panel members pointed to the tension between the value of research funding available and the number of research active staff. They noted that individual researchers, and targeted areas of research, could be better funded if

[199] It was reported that the NSF provides 5-year funding for early-career researchers compared to 3 years from other schemes, and the NIH grants 5 years of funding for early-career researchers and 4 years for researchers who already have an independent award.

[200] Applications have a lower success rate in biomedical than other scientific fields (see Figure 26).

fewer individuals were successful or if funding was focused around chosen topics. However, the opposing view to this was presented by other panel members, who argued that it is not possible to predict winners and therefore a safer option is to distribute funding to a wider pool of applicants. One panel member said:

> *If you cannot identify the stars then you should give funding to everyone and some of the seeds will become stars.*

In addition, participants from senior university management stressed that the current schemes allow diversity to be funded, as long as it is based on excellent research. Some stressed how important RGC funding has been to them in enabling them to continue their research career when returning from overseas.

Researchers, senior managers, and panel and council members recognised the tension between value of awards and number of successful grantees. They accepted that without increasing the overall pot it is not possible to increase the length and value of awards. In response to this, participants stressed the importance of RGC funding for sustaining the research community in Hong Kong, which they identified as a primary aim of RGC funding. Most were therefore in favour of retaining the current value and duration if the total funding allocated was fixed; whereas a minority of researchers and council members felt the length should be extended, resulting in a reduction of grant holders.

Panel members described the level of autonomy the panel, and in particular the panel chair, have in decision making about the grant portfolio for a funding cycle. Specifically, panel members noted that panels' ability to determine success rates and the size of grants affects the balance of types of research and the proportion of basic and applied research funded. Although it was recognised that there may be disciplinary differences in the process and criteria, one panel member mentioned that guidance from the UGC on what is appropriate would be useful.

Promotion and recognition of the individual

Many researchers said that RGC funding is important to advance their career, as it is a metric and measure that they perceived as being valued by their universities. Conversely, researchers asserted that if individuals are not successful at receiving funding, this can have implications for their career beyond being unsuccessful with a specific funding stream. As one participant said:

> *If you get three years consecutively without funding then that would be devastating.*

Researchers from business and engineering at all career stages, as well as Council members said that academics feel a need to apply for a grant every year due to pressure from their institution, and that they see a link between RGC grant success and individual promotion – in particular achieving tenure and recognition. One participant said:

> *Getting a grant is a good thing, a positive indicator for senior faculty who decide on tenure and promotion decisions.*

The reason given for this link was that success in RGC grants is part of the funding formula for the allocation of the R-portion of the block grant from the UGC to HEIs.

Application funding cycling

A number of researchers commented that one round a year is not sufficient, and that this model can have a significant impact on careers, particularly for early-career researchers. Council members agreed that twice a year would be better but felt that this would be impossible under the current process due to the burden on reviewers and human resources. According to one researcher:

> *[There is] one round of review each year, and it takes a year to get the outcome. If you don't get funded you have to wait another year.*

Many researchers, in particular those from business and mid-career researchers, expressed concern about the turnaround time between submission and result, with some querying whether it could be reduced. In particular, it was noted that the time it takes to receive the result of a funding application can cause problems for resubmission where it leaves only a short window until the next application is due.

Researchers also questioned whether the timing could be shifted so that projects begin at the start of the summer rather than the start of the academic year (in September). Some thought this would help with hiring good staff, as the present timing means that those in the highest demand will have been hired by the time researchers hear about a successful grant application. Moreover, researchers said that changing the timing would give researchers more time at the start of a grant as they would not also be teaching.

Related to this, there was uncertainty as to whether researchers can work on proposed work before they are awarded the grant, with some researchers commenting that this is not permitted as conducting the research without funding suggests that the grant is not needed. However, researchers in business were concerned that the time delay in awarding grants and starting work would affect the timeliness and relevance of their proposed research. Some researchers reported that some colleagues do a large portion of the proposed research in advance of applying in order to submit a complete application and provide preliminary data. For early-career researchers without access to students and research assistants this was reported as being difficult and there was uncertainty about how much preliminary data is required.

Research support

When discussing the needs of researchers, a lot of the conversation addressed the level of research support available. While it is important to note that different support may be available for different schemes, the discussion focused on the following aspects: research staff, teaching relief, equipment, and funding for travel and conference attendance.

There was a lack of clarity over what researchers can apply for within their grant. For example, a number of researchers reported colleagues telling them not to apply for equipment or senior research assistants as they would not get the funds for it. According to one researcher, this impression that there are some things (such as particular equipment) that you cannot apply for or will not receive, left them 'discouraged' and affected the scope of the research they proposed. There was the impression that under the current system people are 'forced to play safe' with their proposals.

Many participants complained that they did not have sufficient funding to hire staff – particularly research assistants, postdoctoral researchers or PhD students – to work on their projects. Specifically, participants stressed that salaries had increased with inflation, whereas the value of awards had not.

Teaching relief, where available, was highly valued by the researchers. However, researchers from self-financing institutions in particular commented on the burden of their teaching and research loads. They also said that teaching relief time allowance does not seem to be awarded in proportion to the project length, but rather is capped at a maximum number of hours irrespective of project duration. In general, there was confusion about whether certain schemes are eligible for teaching relief and therefore some researchers felt they would benefit from having more guidelines on how to apply for teaching relief.

There was also confusion on what equipment could be requested or would be funded within a grant, and what should be provided by the host institution. In some instances, participants gave examples where they had not requested funds for equipment for fear that their proposal would be rejected. However, a panel member stressed that this is at the discretion of the researcher. It was noted that, particularly in the creative arts, funding for materials such as production costs for performances, hiring a venue for events and artists' materials would be very valuable. Funding for subsistence, translation and paying participants in social science field work was also desired.

Where available, funding for travel and conferences was felt to be valuable. Some researchers felt that funding for these activities is more generous in Hong Kong than abroad, for example in the US. However, several researchers requested an increase in the funding available for these types of activities in order to maximise collaboration and research conducted with colleagues overseas.

C.2.3. Needs of Hong Kong

When asked whether the funding schemes of the RGC meet the needs of Hong Kong, there was a lack of clarity across respondents about what the needs of Hong Kong are, the strategy through which the RGC intended to address those needs, and what the RGC sought to prioritise. The key areas of focus of this discussion are set out below.

Role of the HEI sector

Participants felt that HEIs have two functions: research and teaching. It was unclear to participants what the balance between these functions should be in the Hong Kong system. There are different schemes for the UGC sector and the self-financing parts of the higher education (HE) sector, which reflect the differences in the aims of the two arms of the sector. Some researchers and panel members argued that it is the role of UGC-sector institutions to conduct blue skies research, whereas the self-financing sector should focus on providing industry with a leading edge through applied research to improve processes and products.

Another aspect of this that was mentioned was the emphasis on capacity building through training researchers and the focus on retaining the best in Hong Kong – whether they are from Hong Kong or overseas – rather than losing them to other countries after they finish their studies.

The RGC in the broader funding landscape

Senior managers in universities and researchers highlighted the importance, and the difficulty, of the role of the RGC in funding research across Hong Kong due to the lack of other sources of funding in the system. There was a perception from senior managers that money available from industry and philanthropy is minimal. In the case of many in the academic community, RGC grants were felt to be the only option for funding. When discussing the type of research that RGC should fund, some participants felt that it should concentrate on basic or blue skies research, leaving the applied research to others such as the ITF.

Based on the level of funding available, as described above, participants queried how to maintain the high international standard that Hong Kong has achieved, particularly given its lower level of investment than comparator counties such as Singapore. To address this, one researcher suggested international partnerships, especially within the region.

Types of research supported

With regard to the types of research supported by the RGC, a number of discussions focused on the different value and prominence placed on research broadly classified as basic or applied. Currently, topics for schemes such as the GRF are selected through a bottom-up approach – i.e. by the researcher submitting the application. Participants felt this to be important, and emphasised that the research community is best placed to be aware of local needs. Council members stressed that although information is collected on whether a proposal is categorised as basic or applied, these categories are not used as the basis for quotas to determine what is funded. Some panel members felt, or reported that peer reviewers for their panels felt, that the RGC should be funding research solely based on academic excellence, and more applied research should be supported by other sources such as the ITF or industry.

There was a perception among some participants that there is more applied research being conducted within the self-financing sector, though others were keen to stress that not all research within the self-financing sector is applied. One self-financing institution was reported to require its researchers' grant submissions to link between their research and teaching, so that it feeds into their teaching and improves it.

As in other systems globally, there is a move towards the funding of more applied research whose value can be justified to the government and tax payers. Participants discussed the issue of communicating the benefit of research to the public and industry to ensure it can be taken up and translated. A number of examples were given where the RGC has supported knowledge transfer events, and greater promotion and engagement was felt to be valuable and necessary.

There was a concern that the trend towards more applied questions may lead to research being directed away from basic to more applied research where the impact is more visible and immediate. This concern was expressed not only with regard to science subjects, but also the humanities and social sciences. For example, one of the participants, a creative artist, said it is easier for their colleagues to get a grant to write about their music than to get a grant to compose.

In line with this perceived trend, there was a concern from researchers that some disciplines would struggle to be applied and to demonstrate their impact and benefit to society. Examples given included history literature and Chinese studies. Others stressed that as well as benefits and impact through commericalisation, there are broader societal benefits which should not be forgotten. These are discussions which are also going on internationally, and some participants noted that Hong Kong will undertake an assessment of the impact of research on broader society as part of its upcoming RAE.

Another issue that was raised was the balance between international significance and local relevance. When asked about this, a number of researchers at all stages of their careers felt that Hong Kong, as an international hub, should not consider local relevance and should instead work on international issues, such as smart cities, which would by default be important to but not limited to Hong Kong. Others felt that international significance is more important than local relevance. One area of local relevance in which participants noted that outstanding research is being conducted was South China cancer.

There was a concern from senior managers and also researchers from business that research that is locally relevant or applied will not be accepted for publication in a top journal – an individual criterion for promotion within HEIs. Linked to this, a panel member for the GRF stated that the panel were looking for global outputs, which they felt could be difficult to achieve through research with a local focus. Senior managers are looking at ways to combine the publication requirements with local relevance; for example inclusion of local context in a research project or using local data for part of it.

Due to the size of the sector in Hong Kong, applications are often reviewed by international experts in order to reduce bias and conflict of interest in a small community. However, participants raised questions as to how international experts could assess local relevance.

Researchers acknowledged the challenges in creating research with benefits for wider society due to the time taken to deliver these broader benefits. As mentioned above (Section C.2.2) there was a concern that the short duration of funding available results in less ambitious and potentially less impactful research, with researchers aiming primarily to meet the output requirement at the end of their grant and remain eligible to apply for more funding.

Focusing on the role of the RGC in facilitating impact and translation of research, one panel member mentioned that the RGC could do more to support and incentivise commercialisation of research. Their suggestions are detailed in Box 5.

Box 5: Support mechanisms through which participants suggested the RGC could encourage impactful research

- Showcase and promote successful examples to the public, government and industry.
- Encourage local engagement to enable presentation of relevant and usable information to local industry i.e. beyond journal publications in English.
- Encourage applications from applied research areas to emphasise support for research which aims to benefit society.
- Support projects that can secure matched funding from industry.

Quality of research

The definition of quality was discussed in several focus groups. Some researchers felt that the quality threshold is lower to receive funding in the self-financing sector, whereas others strongly opposed this view. In particular, those on the self-financing panel, who were academics within UGC-funded universities, felt that the quality threshold is closely comparable – as it should be – in part because of the movement of academics from the UGC to self-financing sectors to focus on more applied research. One participant stressed that quality is most important, irrespective of the social value. However, there is still misinformation on the assessment process and the merits on which proposals are reviewed.

Quality is very subjective. It has four dimensions. The first is originality (innovative) in order to have the thing published in the top journals. Then it has to be relevant – this is what makes it interesting. Then track record and visibility also come into play. Different people might have different perspectives on the weighting of the aspects of quality.

Geographical diversity within the HKPFS

When asked specifically about the HKPFS, support was voiced by some for the scheme, which was perceived as having a global vision and as 'a good way to attract good people'. However, some others felt that the scheme does not attract the best students and does not have many local Hong Kong students. In particular, administrators of the HKPFS felt that the student population is heavily dominated by mainland Chinese students and an increasing number of African students, with fewer submissions from European countries. They felt this may be because of what they perceived as the diminishing attractiveness of the funding allocation to international students. There were divergent views on whether students who came from overseas to study tend to stay in Hong Kong beyond the length of their studies. Several administrators were also concerned that the research topics chosen by students are not always relevant and therefore beneficial, to Hong Kong.

C.2.4. RGC process

Participants were asked for their thoughts on the different stages of the application and assessment process.

Application and submission processes

The submission process was viewed as fit for purpose by respondents at a range of career stages. However, many respondents did comment that they felt the submission system could be made more efficient. Both the proposal and the instructions for the proposal were seen as being very long, and getting longer and more complicated over time. Online submission was reported to require a lot of manual entry, and the interface was reported to be difficult to use. One respondent commented that it could take weeks just to fill everything in on the system. A number of respondents across the focus groups suggested streamlining the system, for example by automatically pulling out information entered in previous years so that re-entry is not required.

A number of researchers commented on the large number of declarations that are required within the application form, for example on relationships with those suggested as reviewers. This led to discussions

about what would happen if an applicant did not accurately declare everything – many researchers expressed fear of disqualification, which they said holds applicants back from suggesting reviewers. Examples were given of researchers who had been disqualified, although there was one example of explanation of non-declaration in which funding was still awarded.

Review process

In general, panel and council members are very positive about the review system. Multiple panel members commented that the review process is as reliable and fair as possible. Panel members felt that the RGC has a good reputation worldwide and is therefore able to attract high-quality reviewers. When comparing against other systems (e.g. China and Australia) many panel members felt that the RGC system is particularly fair, as the RGC does its best to reduce conflict of interest and the external peer reviews from experts ensure that the influence of panel members is appropriate. According to one panel member:

The current system with the two tiers, external reviewers and a panel, as a whole is an excellent system... The strongest and most vocal critics, when they serve on the panel, they become converts [to the process].

Researchers, on the other hand, tended to have more mixed views, with many commenting on a lack of fairness, transparency and reliability. Across the focus groups we heard contradictory understandings of the process and many researchers highlighted elements of the process with which they were not familiar. These are examined in detail below, and included:

- Panel membership
- Suitability of reviewers to assess particular applications
- Nomination of reviewers
- Number of reviewers per application.

Researchers are generally unclear on how panel members are chosen; some senior managers noted that they are asked to nominate but do not know how these nominations are used. In particular, some researchers and senior managers felt that panels did not represent all universities and there should be proportional representation. One researcher also questioned the length of term of panel membership, suggesting limiting it to less than six years.

Participants gave positive views on the use of external panel chairs, but there were mixed views on what the balance of local and international members should be for the rest of the panel. Some researchers and senior managers argued that overseas members improve impartiality and objectivity and thus limit the potential risk of conflict of interest, but other researchers asserted that local members understand the system better and should be trusted to be fair.

In the self-financing sector, researchers felt that panel members, who tend to come from UGC-sector institutions, do not understand and appreciate how the priorities of the two sectors differ. Consequently, many participants from the self-financing sector expressed fear that they are judged against the same yardstick as the UGC sector, which was described as more research-intensive and mature.

Many participants commented on the quality of reviews, citing examples of reviewers who they felt did not understand the topic, had not read the proposal, or gave the proposal to their student. Related to this,

some researchers also noted that, because applicants do not know who carried out the review and so cannot gauge their suitability, it is difficult to know if the system is fair.

It was generally felt that using overseas reviewers is a positive practice that helps to avoid conflict of interest. However, some researchers from business were worried about the theft of ideas and concepts. Panel members and researchers from business, as well as some from humanities and social sciences, discussed the possibility of blind reviews. While some felt this would be useful to avoid conflict of interest, others commented that the inclusion of track record as part of the assessment makes blinding impossible.

Many panel members discussed the issue of poor-quality reviews. There is currently a system in some schemes for applicants to comment on whether or not they would re-use a reviewer, and also a blacklist, but council members were concerned about blacklisting reviewers too quickly and said they do not use it much. Researchers and panel members appreciated that it can be difficult for panels to get enough reviewers. Some described reviewer fatigue in cases where good reviewers have been overused, which reduces the available pool of reviewers. Panel members commented that giving applicants the chance to nominate reviewers is a useful way to ensure that they can find appropriate reviewers, although some panel members also argued that nominated reviewers tend to be biased and so the system is not needed. However, the current system of declarations does not encourage researchers to provide suggestions for fear of disciplinary action.

Many researchers and senior managers said that the number of reviewers varies for different applications. This was felt to be unfair, and also increased the feeling that they do not understand the system. Panel members, on the other hand, felt that while this is not ideal, the time constraints and disciplinary differences of particular fields and niche areas make it impossible to ensure all applications receive the same number of reviews.

Scoring and decision making

There was a lack of understanding across focus groups of how the scoring system works – both in the assessment by peer reviewers, and when scores are combined by panel members. This was visible through the statements from researchers in our focus groups, and was also reported by council members.

Participants noted that reviewing and providing scores is necessarily subjective, and a number commented on the diversity of the scores that they have received. To address this, one researcher suggested deleting the lowest and highest score. The perceived diversity was viewed as making it difficult to compare applications using average scores and to ensure the reliability of the system. For example, two researchers gave examples of resubmitting unfunded proposals with no changes and receiving funding on resubmission. One commented:

Reviewing is subjective and always get comments you feel are unfair, however [the] process [is] generally fair.

Six of the focus groups felt that the scoring grades are not understood in a uniform way across reviewers. It was suggested that instead of subjective terms such as 'good' and 'excellent' the system could be changed to terms that describe what that score means in practice, such as 'definitely fund', 'fundable', and 'not fundable'. Some researchers also identified variation in scoring across different types of research,

giving the example of interdisciplinary work, which they perceived as getting lower scores, and suggesting that quality adjustment might be needed between fields.

The majority of researchers did not understand how panel decisions are made. Many said 'my impression is' or 'I assume' when describing their understanding. Panel members, however, felt that the process is efficient and fair. Some also noted that they felt the process is fairer than those used in other countries, such as China and Australia. Some panel members discussed changes that have been implemented to make the process fairer. For example, in the engineering panel reviewers are now asked to declare their level of knowledge on a given topic (e.g. expert, knowledgeable, etc.). Panel members also described how they deal with outlier scores through general discussion, and how they request extra reviews if the panel lacks knowledge in the area – processes that researchers in the room were unaware of. One researcher commented:

GRF reviewers are transparent, but the panel meeting is a black box. What is the score based on? Track record, team members? Once you get started it's easier to have a track record.

The greatest confusion was around how reviewer scores are used. There was a widespread opinion among researchers that one bad review would stop an application from being funded. However, panel members explained that the panel member acting in the capacity of the proposal reader does not necessarily just take the average of the reviewer scores, and will look at the reviews and consider whether the outliers have merit. A rumour mentioned in a few of the focus groups held that the panel downgrade scores in order to limit the number of proposals funded or distribute the available funding.

Some panel members felt that transparency and trust in the system might be increased if, in addition to the comments from each reviewer, applicants were provided with a summary of comments and explanation of scoring. For example, one researcher suggested, that applicants could be informed of which of the questions in the assessment form decides the score, and how is it calculated – a suggestion that the researcher argued would support understanding and the submission of better applications in future. However, others disagreed with this suggestion due to the extra burden that would be created by this increased feedback, and argued that justification is not always clear-cut as peer review is an inherently subjective process. One panel member said:

Decisions are often marginal... Giving out detailed feedback would exacerbate the problem.

Some researchers (in particular those at an early career stage) stressed how useful the feedback they had received was. One example was given where a researcher was initially unsuccessful in securing funding due to the scope of work proposed within a given budget, but using the feedback provided was able to submit a proposal with a reduced scope to a subsequent RGC funding call.

Appeals and resubmission

Researchers from a range of career stages and disciplines, as well as senior managers, noted with dissatisfaction that there is no appeal process if an application is unsuccessful. Views on resubmission were mixed. It is possible to resubmit, but this requires waiting a year until the next cycle. Two researchers stressed that the comments received from the initial submission were useful for resubmission. However some researchers expressed fear of disqualification in resubmission due to the impression of working on the same topic or not declaring everything, and others believed that panel members do not like

resubmission and therefore were not favourable towards these applications. In the business focus group, there was a discussion about whether resubmitted proposals are reviewed by the initial reviewers. A panel member noted that they do try to do this, but often get turned down by those reviewers. It was suggested that extra effort should be put into trying to get the same reviewers for resubmissions as the original submission.

Disciplinary Committees

In general, researchers and panel members felt that processes for handling alleged misconduct cases could be improved. Many said that the consequences for some minor misdemeanours, such as non-declaration of conflict of interest (reported to be 90 per cent of cases that reach DCs) were too harsh, with decisions having a substantial impact on individuals' careers.[201] In addition, one researcher commented that the process is very slow, which can have an effect even on the careers of those found not guilty, as grant funding is suspended during the investigation.

Respondents involved in disciplinary processes from universities and those on disciplinary committees commented that it is often difficult to collect evidence accurately enough to draw a valid judgment on cases. Respondents said that this places a heavy burden on those making decisions. DC members also felt they do not get sufficient time to properly discuss cases and make judgments. One DC member did comment that the two-stage process is good as it separates out the decisions on guilt and on the appropriate penalty.

Some committee members discussed putting disciplinary responsibilities in the hands of HEIs working to a set of criteria, and then having an office of research integrity outside of the UGC that endorses/checks the decisions made. However, not all panel members were in favour of this suggestion.

Post-award monitoring

Focus group participants described a process of mid-term and final reporting, the timings of which vary depending on the duration of the award. Researchers across the disciplines generally felt that the monitoring process for awards (submitting a mid-term and a final report) are satisfactory.

There was a mismatch between researchers' and panel members' understandings of the purpose of the mid-term report. Some researchers expected feedback on their progress, whereas panel members said that they are only asked to comment on use of money and extent of progress, not to evaluate the work itself. Related to this, some participants from the physical science scheme were concerned that the recent introduction of installment payments in the GRF is inappropriate for them as spend across a grant was not constant and a large proportion of the funding may be needed upfront to pay for equipment.[202]

In the self-financing sector, panel members play an active role in monitoring grants which they are responsible for awarding through a 'Shepherd' role. This requires them to actively monitor an award, ensuring progress is in line with plan, for example checking that money has been spent on equipment

[201] Between 2014/15 and 2016/17 there were 49 cases brought to the DC: 30 alleged cases of non-disclosure of relationship with reviewers (61 per cent), 14 alleged cases of non-disclosure of similar/related projects (29 per cent), four alleged cases of plagiarism (8 per cent) and one alleged case of falsification (2 per cent).

[202] Research projects which last a year or less receive a one-off payment; those which last more than 12 months are paid in installments.

where specified. This is burdensome on the panel members where there are inaccuracies in the reporting, and so some respondents queried whether the RGC could provide further support to the checking process.

When discussing the final report requirements, senior managers stated that researchers from social sciences and business studies, as well as researchers in the self-financing sector, think that they need to produce a paper by the time of the final report in order to 'pass' and be eligible to apply for subsequent funding from the RGC. Some felt that the timeframe of the award is not sufficient to produce a high-quality publication as required by the university, and this may force some to produce a lower-quality publication in order to avoid an unsatisfactory grade through monitoring and penalisation by the RGC in the future. Panel members from social sciences and business studies explained that extensions are possible in these types of instances, and that panel members are generally reluctant to give people an 'unsatisfactory' grade. Many researchers in these groups were unaware of this. Senior managers from the self-financing sector felt that the expectation of a publishable output from the IDS and IIDS is inappropriate.

Council members recognised that the system works best when those who initially review and approve the application stay involved and conduct the monitoring and follow-up for the grant awarded. However, this is additional burden to which panel members and reviewers are not always able to commit, and this means that reports are not always read.

C.2.5. Fostering collaboration

The RGC supports collaboration at a number of levels and through specific schemes, which are detailed below. We have identified four main levels of collaboration: within an institution, between disciplines, between institutions, and with international partners. A key aim of specific streams of funding from the RGC is to foster and encourage collaboration. In the UGC sector these schemes are the CRF, the AoE Scheme and the TRS. In addition, when asking researchers about collaboration, some in the self-financing sector brought up the benefits of the IIDS, which are included below.

In general, researchers said that these schemes are effective in supporting collaboration, and examples were given where funding had stimulated collaboration within Hong Kong or internationally. For example, a number of researchers stressed that the schemes such as the IIDS 'promote research culture' and 'enhance networking'. In particular, there were examples where funding had enabled a critical mass of researchers to work more efficiently on a shared interest and achieve more than they could individually, or enabled training on the use of equipment by international experts. A few participants mentioned the Joint Research Schemes, which are co-funded between the two participating countries (e.g. Hong Kong and the European Commission). One participant suggested expanding the range of partners in this stream to include Australia, North America and social sciences in China:

> *Inter-institutional projects play a great role. RGC brings people together and we see if we can find collaborative ideas.*

On the other hand, some queried whether collaboration should be incentivised, and whether linking it to funding forces unnatural pairing. Anecdotal examples were given where collaborators were named on a

proposal in order to win the funding, but had not contributed. One tension identified by a participant was supporting collaboration within Hong Kong when groups are often in competition for funding.

It was mentioned in some focus groups that the value of collaborative awards allocated was higher than other schemes, such as the GRF. This was appreciated by some researchers, but others queried whether the proportion of overall funding allocated to these schemes should be reviewed and reduced in favour of individual schemes like the GRF.[203]

One issue raised was access to these collaborative schemes. Whereas the GRF is open to everyone, early-career researchers felt that they could not apply, or would not be successful in receiving a collaborative grant, without proven track record and expertise in the system. In particular, one participant commented that it is hard for early-career researchers to collaborate internationally, and that this funding stream does not currently provide the opportunity for early-career researchers to produce proposals with international academics. Linked to this, when asked at the HKPFS student focus group, all five attendees felt that the scheme does not promote collaboration within their institution, and that this is an area which could be enhanced.

The CRF scheme is also the mechanism for funding major pieces of equipment. Although these can be shared between institutions within Hong Kong, researchers, senior managers and panel members felt this confuses the purpose of the scheme, and equipment funding should be a separate stream of investment, as it is in the US NIH. There was also concern that the investment by the RGC is lower than the level of investment in infrastructure in other countries.

There was discussion on how the themes for the TRS programme were selected, and how researchers whose areas were outside of the selected areas could apply for funding. Some suggested that there is a focus on technology, which does not take into account the humanities and social sciences research ongoing in Hong Kong.[204] Others felt that these programmes could be even linked more closely to local needs. When debating the assessment of these awards, a panel member argued that there should be smaller and more specific panels, to ensure the expertise of the reviewers is relevant and aligned with the proposal.

Several participants from the self-financing sector suggested that the RGC could stress the purpose of the IIDS to support proposal development between institutions or joint effort in existing projects (between self-financing and UGC-sector institutions). It was suggested that this would allow mutual learning from different strengths within the research system, such as the established research ongoing in UGC-funded universities institutions and the self-financing sector's experience with industry.

[203] It is important to note that the funding for a number of the collaborative schemes such as the AoE Scheme and TRS, is provided from government through a separate stream to the endowment, and therefore the RGC are restricted in the movement of funds between some schemes.

[204] Starting from 2016/2017 the four themes under the TRS are: (Theme 1) Promoting Good Health; (Theme 2) Developing a Sustainable Environment; (Theme 3) Enhancing Hong Kong's Strategic Position as a Regional and International Business Centre; and (Theme 4) Advancing Emerging Research and Innovations Important to Hong Kong.

C.2.6. *Engagement between the RGC and the research community*

Researchers generally felt that there is minimal engagement with the RGC, with some saying that this review was the only engagement they had had. Some researchers, and even some senior managers at universities, said that only senior academic staff are really able to engage with the RGC. Moreover, they suggested that there is a one-way information channel from the RGC to the research community, and that an opportunity for the sector to respond or feed into discussions would be valuable. Heads of universities in particular wanted greater input into the RGC and policy developments by the UGC.

The RGC runs Town Hall meetings which are open to all, and has also hosted meetings at universities where panel members describe processes. Panel members described Town Hall meetings as being well attended, but felt that given the misinformation in the system, more Town Hall meetings and other engagement activities may be useful to improve transparency. Two researchers who had attended meetings with panels said they felt the meetings did not give them the level of detail they would like, and another commented that while the RGC does appear to be trying, much more could be done to ensure that the research community understands the process.

Researchers from the self-financing sector in particular felt that communication could be improved. As the process is still relatively new in these institutions, and there is not a lot of expertise within them on how to write successful applications, researchers felt that not enough information is provided, and that communication could be improved to allow people to fully understand what is required of them.

Researchers and panel members (both local and international) felt that there is a lack of clarity on the RGC's strategy and areas of focus. There was limited understanding of the structure of RGC funding and the ability of the RGC itself to move money around between funds. Some late-career researchers also identified a lack of clarity on who was responsible for the strategy of the RGC.

In the HKPFS, administrators would value increased support from and contact with the RGC. Currently, when there is a decision to be made about the use of funding to support particular activities, the administrators are not in a position to decide on whether this is allowed and contact the RGC to confirm. This takes time and causes delays. Students felt it would be valuable to have greater interaction with others on the scheme, within their institution and more broadly. Several participants therefore suggested that they would benefit from an alumni gathering supported by the RGC or a student conference.

C.3. Caveats and limitations

While the focus groups allowed us to explore a wide range of opinions about the RGC and better understand the issues raised in the surveys, there are disadvantages of this data collection approach.

The purpose of the focus groups was to explore areas for improvement identified from the survey data – i.e. where there was least satisfaction with the current processes. There was therefore less time spent discussing elements that worked well. In addition, as we used a semi-structured protocol, not all questions were addressed within each focus group, or with each focus group participant.

The results are necessarily based on perceptions and opinions of focus group attendants, and a range of views was expressed by each focus group. Contradictory points could be raised within a discipline, as

disciplines were covered through multiple focus groups.[205] This means that statements are not necessarily representative of a 'discipline' view, but rather the views of individuals within a discipline. For this reason we have not quantified the analysis and it is difficult to indicate the weight of evidence about any particular point.

The focus groups were split across the team and therefore different interview styles were used. In order to minimise the effects of this variation, the pairs were rotated to ensure that all junior researchers worked with all senior researchers and vice versa. The interviews were written up as a summary of the discussions rather than a verbatim transcript of the conversation, and this is one point at which information could have been lost. Other points at which this could have occurred are the coding and analysis stages. There were three researchers coding the notes and therefore variations in coding style were visible. We aimed to mitigate the effect of this on the analysis with regular meetings to discuss queries and provide an agreed standard of coding practice.

[205] The same can be said for career stages.

Annex D Protocols

D.1. Survey soliciting UGC-institution researcher views on the Research Grants Council

This survey is one element of a review of the Hong Kong Research Grants Council (RGC). The main purpose of the review is to ensure funding is used and managed efficiently, and meets the needs of Hong Kong in the field of academic research. In the review we are considering the following broad questions:

Do the current funding schemes:
a) Fit the needs of researchers in Hong Kong?
b) Fit the needs of the wider research community in Hong Kong?
c) Complement other available funding opportunities in Hong Kong?

Is the current RGC structure efficient and effective at:
a) Formulating initiatives that reflect the needs of the research community?
b) Assessing research proposals?
c) Handling disciplinary cases?

What improvements could be made to the current funding schemes and current RGC structure?

If you have any further comments or questions, please email rgc_review@rand.org

Your background

1. Please indicate your academic disciplinary area
    a. Business studies
    b. Biology and medicine
    c. Social sciences and humanities
    d. Engineering sciences
    e. Physical sciences

2. Please indicate the number of years you have worked at a UGC-funded institution in Hong Kong
    a. 0-4

b. 5-9
c. 10-14
d. 15-19
e. 20-24
f. 25-29
g. More than 30

3. Please indicate your university
    a. CityU
    b. HKBU
    c. LU
    d. CUHK
    e. EdUHK
    f. PolyU
    g. HKUST
    h. HKU

4. Please indicate your position
    a. Chair Professor/Professor
    b. Associate Professor
    c. Assistant Professor
    d. Senior Lecturer
    e. Lecturer
    f. Assistant Lecturer
    g. Other, please specify

5. Do you have tenure?
    a. Yes
    b. No

6. Please indicate your gender
    a. Male
    b. Female
    c. Other
    d. Prefer not to say

7. Please indicate your age
    a. 20-29
    b. 30-39
    c. 40-49
    d. 50-59
    e. >60
    f. Prefer not to say

RGC funding

8. Please indicate, for each scheme, the total number of RGC awards you:
    a. have ever applied for as PC/PI
    b. have ever held as PC/PI
    c. currently hold as PI

    For each scheme there will be a bar (or drop down list?), initially set to 0, which will allow individuals to choose from: 0, 1, 2, 3, 4, more than 4

Scheme	Total number of awards ever applied for	Total number of awards ever held	Total number of awards held currently
General Research Fund			
Early Career Scheme			
Humanities and social sciences prestigious fellowship scheme			
Collaborative research fund			
Theme research scheme			
Areas of Excellence scheme			
Joint Research Scheme (of any type)			

9. Have you ever applied for an RGC funding scheme for the self-financing sector?
    a. Yes
    b. No

10. If yes in Question 9, please indicate, for each scheme, the total number of RGC awards you:
    a. have ever applied for as PC/PI
    b. have ever held as PC/PI
    c. currently hold as PI

    For each scheme there will be a bar (or drop down list?), initially set to 0, which will allow individuals to choose from: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more than 10

Scheme	Total number of awards ever applied for	Total number of awards ever held	Total number of awards held currently
Faculty Development Scheme			
Inter-institutional Development Scheme			
Institutional Development Scheme			

11. Do you currently hold any grant funding from sources other than the RGC?*
    a. Yes
    b. No

12. If yes, please indicate, the sources (free text box)

Current Funding Schemes

13. Please state the extent to which you agree with the following sentences about the current funding schemes (excluding the HKPFS)

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
They offer the right balance of awards between new investigators and experienced investigators						
They offer the right balance of awards across disciplines						
They integrate research and education appropriately						
They represent the right balance of basic and applied research						
They represent the right balance of research topics of local relevance and international significance						
They are the right monetary value for the scope of the projects						
They are the right duration for the scope of the projects						
They are inclusive and do not discriminate based on ethnicity, nationality or gender						

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
They reflect the needs of the research community						

14. Assuming total funding is relatively fixed, do you think that RGC should:
    a. award fewer but individually larger grants
    b. maintain the current distribution based on smaller levels of award

15. Please state the extent to which you agree with the following sentences about the three group funding schemes: the Collaborative Research Fund, the Theme Research Fund and the Areas of Excellence scheme.
    They promote collaboration among researchers:

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
Within institutions						
Between institutions						
Between disciplines						
Within Hong Kong						
Internationally						

16. There are many criteria which are used in the assessment of research proposals. The list below provides a range of criteria which are drawn from research funding councils worldwide. Please indicate up to 5 criteria you feel should be used in the assessment of grants
    Select at least 1 and no more than 5.
    a. Academic merit
    b. Benefit to society
    c. Commercial translation
    d. Inter-disciplinarity
    e. Originality
    f. Local relevance of project
    g. Extent to which there is integration of research, training and teaching in the grant
    h. Strength of collaborators
    i. Track record/merit of PI
    j. Personal skills of PI such as communication and leadership skills
    k. Feasibility in implementation
    l. Value for money

m. Stakeholder involvement
n. Other

17. Please indicate up to three types of research support provided by the RGC you feel are most important *Select at least 1 and no more than 3.*
    a. Research support staff and technical staff
    b. Equipment
    c. Outsourcing of research work outside Hong Kong
    d. Travel and subsistence
    e. Relief teachers
    f. Relief administrators
    g. Consumables related to research work
    h. Survey expenses
    i. Conference expenses
    j. Research related software licence/dataset
    k. Research experience for undergraduate students
    l. Other

18. Please list any types of research support not currently provided by the RGC that you feel would be useful?
    Free text entry

The Hong Kong PhD Fellowship Scheme

19. Have you had a student on the HKPFS, or otherwise been involved in it (e.g. as a student)?
    If yes then routing will show the following question

20. Please state the level at which you agree with the following statements about the Hong Kong PhD Fellowship Scheme.

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
It attracts the best and brightest students in the world to pursue their PhD study in Hong Kong.						
It enhances cultural diversity and internationalisation of the sector.						
It has the correct mix of local and non-local students.						
It is inclusive and does not discriminate						

based on ethnicity, nationality or gender.
It has the right balance of disciplines.
Its value and types of support (i.e. HK$240,000 as stipend and HK $10,000 as conference and research-related travel allowance per annum) are appropriate
It has appropriate terms and conditions.

The RGC

21. Please state the level at which you agree with the following statements about the RGC

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
Its priorities match the needs of Hong Kong						
It engages with an appropriate spectrum of researchers when it sets its priorities						
It uses appropriate methods for engaging with researchers in the setting of priorities						

22. Please state the level at which you agree with the following statements about the RGC application and review process

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
It is fair						
It is reliable						
It is transparent						
It is efficient						
It is effective						

23. Please state the level at which you agree with the following statements about the Disciplinary Committees of the RGC.

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
They are effective at reviewing appeals						
They are effective at handling research improprieties						
The current procedures for investigation of alleged misconduct/appeal are fair						

24. How often do you utilise the following resources of the RGC for getting information and updates on the RGC activities?

	Once a year or less	Every six months	Every three months	Never	Don't know
RGC Annual Report					
RGC Website					
RGC YouTube Channel					

25. Based on any experience you may have had of other national systems for supporting research, what would you recommend to RGC from these systems and why??
[Open text limited to 200 words]

26. Has RGC funding enabled you to develop your work and career beyond the life-time of an individual grant or project? In what ways?[Open text limited to 200 words]

27. Is there anything else not covered here that you think we should consider in this study?
[Open text limited to 200 words]

Thank you for taking the survey!

Please note that as part of the review of the RGC, we are also running an online consultation. If you feel that there are important points that you have not been able to make here, then please feel free to also take part in the online consultation which you can access here https://smapp2.rand.org/surv4/TakeSurvey.aspx?PageNumber=1&SurveyID=92KL6772&Preview=true# from the 20th of October for 1 month.

If you have any further comments or questions, please email rgc_review@rand.org

D.2. Survey soliciting self-financing institution researcher views on the Research Grants Council

This survey is one element of a review of the Hong Kong Research Grants Council (RGC). The main purpose of the review is to ensure funding is used and managed efficiently, and meets the needs of Hong Kong in the field of academic research. In the review we are considering the following broad questions:

Do the current funding schemes:
a) Fit the needs of researchers in Hong Kong?
b) Fit the needs of the wider research community in Hong Kong?
c) Complement other available funding opportunities in Hong Kong?

Is the current RGC structure efficient and effective at:
a) Formulating initiatives that reflect the needs of the research community?
b) Assessing research proposals?
c) Handling disciplinary cases?

What improvements could be made to the current funding schemes and current RGC structure?

If you have any further comments or questions, please email rgc_review@rand.org

Your background

1. Please indicate your academic discipline area
   If needed, multiple academic disciplinary areas can be selected
   a. Business studies
   b. Biology and medicine
   c. Social sciences and humanities
   d. Engineering sciences
   e. Physical sciences

2. Please indicate the number of years you have worked at a self-financing institution in Hong Kong
   a. 0-4
   b. 5-9
   c. 10-14
   d. 15-19
   e. 20-24
   f. 25-29
   g. More than 30

3. Please indicate your institution
   a. Caritas Institute of Higher Education
   b. Centennial College

c. Chu Hai College of Higher Education
d. Gratia Christian College
e. Hang Seng Management College
f. HKCT Institute of Higher Education
g. Hong Kong Nang Yan College of Higher Education
h. Hong Kong Shue Yan University
i. School of Continuing Education, Hong Kong Baptist University
j. School of Professional Education and Executive Development, The Hong Kong Polytechnic University
k. Technological and Higher Education Institute of Hong Kong
l. The Open University of Hong Kong
m. Tung Wah College

4. Please indicate your position
    a. Chair Professor/Professor
    b. Associate Professor
    c. Senior Lecturer
    d. Lecturer
    e. Assistant Lecturer
    f. Other, please specify

5. Do you have tenure?
    a. Yes
    b. No

6. Please indicate your gender
    a. Male
    b. Female
    c. Other
    d. Prefer not to say

7. Please indicate your age
    a. 20-29
    b. 30-39
    c. 40-49
    d. 50-59
    e. >60
    f. Prefer not to say

RGC funding

8. Please indicate, for each scheme, the total number of RGC awards you:
   a) have ever applied for as PC/PI or co-PI
   b) have ever held as PC/PI or co-PI
   c) currently hold as PI or co-PI
   For each scheme there will be a bar (or drop down list?), initially set to 0, which will allow individuals to choose from: 0, 1, 2, 3, 4, more than 4

Scheme	Total number of awards ever applied for	Total number of awards ever held	Total number of awards held currently
Faculty Development Scheme			
Institutional development Scheme			
Inter-institutional Development Scheme			

9. Have you ever applied for an RGC funding scheme for the UGC sector?

   a. Yes

   b. No

10. If yes in Question 9, please indicate, for each scheme, the total number of RGC awards you:
    a) have ever applied for as PC/PI or co-PI
    b) have ever held as PC/PI
    c) currently hold as PI
    For each scheme there will be a bar (or drop down list?), initially set to 0, which will allow individuals to choose from: 0, 1, 2, 3, 4, more than 4

Scheme	Total number of awards ever applied for	Total number of awards ever held	Total number of awards held currently
General Research Fund			
Early Career Scheme			
Humanities and social sciences prestigious fellowship scheme			
Collaborative research fund			
Theme research scheme			

Areas of Excellence

The Hong Kong PhD Fellowship Scheme

Joint Research Scheme (of any type)

11. Do you currently hold any grant funding from sources other than the RGC?*
    Yes/no

12. If yes, please indicate, the sources (free text box)

Current Funding Schemes

13. Please state the extent to which you agree with the following sentences about the current funding schemes for the self-financing sector

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
They offer the right balance of awards to new investigators and experienced investigators						
They offer the right balance of awards across disciplines						
They integrate research and education appropriately						
They represent the right balance of basic and applied research						
They represent the right balance of research topics of local relevance and international significance						
They are the right monetary value for the scope of the projects						
They are the right duration for the scope of the projects						
They are inclusive and do not discriminate based on ethnicity, nationality or gender						
They reflect the needs of the research community						

14. Assuming total funding is relatively fixed, do you think that RGC should
    a. award fewer but individually larger grants
    b. maintain the current distribution based on smaller levels of award?

15. There are many criteria which are used in the assessment of research proposals. The list below provides a range of criteria which are drawn from research funding councils worldwide. Please indicate up to 5 criteria you feel should be used in the assessment of grants
    Select at least 1 and no more than 5
    o. Academic merit
    p. Benefit to society
    q. Commercial translation
    r. Inter-disciplinarity
    s. Originality
    t. Local relevance of project
    u. Extent to which there is integration of research, training and teaching in the grant
    v. Strength of collaborators
    w. Track record/merit of PI
    x. Personal skills of PI such as communication and leadership skills
    y. Feasibility in implementation
    z. Value for money
    aa. Stakeholder involvement
    bb. Other

16. Please indicate up to three types of research support provided by the RGC you feel are most important *Select at least 1 and no more than 3*
    m. Research support staff and technical staff
    n. Equipment
    o. Outsourcing of research work outside Hong Kong
    p. Travel and subsistence
    q. Relief teachers
    r. Relief administrators
    s. Consumables related to research work
    t. Survey expenses
    u. Conference expenses
    v. Research related software licence/dataset
    w. Research experience for undergraduate students
    x. Other

17. Please list any types of research support not currently provided by the RGC that you feel would be useful?
    Free text entry

The RGC

18. Please state the level at which you agree with the following statements about the RGC

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
Its priorities match the needs of Hong Kong						
It engages with an appropriate spectrum of researchers when it sets its priorities						
It uses appropriate methods for engaging with researchers in the setting of priorities						

19. Please state the level at which you agree with the following statements about the RGC application and review process

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
It is fair						
It is reliable						
It is transparent						
It is efficient						
It is effective						

20. Please state the level at which you agree with the following statements about the Disciplinary Committees of the RGC.

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
They are effective at reviewing appeals						
They are effective at handling research improprieties						
The current procedures for investigation of alleged misconduct/appeal are fair						

21. Based on any experience you may have had of other national systems for supporting research, what would you recommend to RGC from these systems and why? [Open text limited to 200 words]
22. Has RGC funding enabled you to develop your work and career beyond the life-time of an individual grant or project? In what ways? [Open text limited to 200 words]

23. Is there anything else not covered here that you think we should consider in this study? [Open text limited to 200 words]

Thank you for taking the survey!

Please note that as part of the review of the RGC, we are also running an online consultation. If you feel that there are important points that you have not been able to make here, then please feel free to also take part in the online consultation which you can access here https://smapp2.rand.org/surv4/TakeSurvey.aspx?PageNumber=1&SurveyID=92KL6772&Preview=true# from the 20th of October for 1 month.

If you have any further comments or questions, please email rgc_review@rand.org

D.3. Survey soliciting RGC members and RGC committee and panel members views on the Research Grants Council

This survey is one element of a review of the Hong Kong Research Grants Council (RGC). The main purpose of the review is to ensure funding is used and managed efficiently, and meets the needs of Hong Kong in the field of academic research. In the review we are considering the following broad questions:

Do the current funding schemes:
a) Fit the needs of researchers in Hong Kong?
b) Fit the needs of the wider research community in Hong Kong?
c) Complement other available funding opportunities in Hong Kong?

Is the current RGC structure efficient and effective at:
a) Formulating initiatives that reflect the needs of the research community?
b) Assessing research proposals?
c) Handling disciplinary cases?

What improvements could be made to the current funding schemes and current RGC structure?

If you have any further comments or questions, please email rgc_review@rand.org

Your background

1. Please indicate which Council / Committee / Panel you have been a member of
    a. Research Grants Council
    b. Collaborative Research Fund Committee
    c. Biology & Medicine Panel (Individual Research)
    d. Biology & Medicine Panel (Joint Research Schemes)
    e. Business Studies Panel (Individual Research)
    f. Business Studies Panel (Joint Research Schemes)
    g. Engineering Panel (Individual Research)
    h. Engineering Panel (Joint Research Schemes)
    i. Humanities and Social Science Panel (Individual Research)
    j. Humanities and Social Sciences Panel (Joint Research Scheme)
    k. Physical Sciences Panel (Individual Research)
    l. Physical Sciences Panel (Joint Research Schemes)
    m. HKPFS Steering Committee
    n. H Panel of the HKPFS
    o. S Panel of the HKPFS
    p. Major Projects Steering Committee

q. TRS Selection Panel
r. AoE Selection Panel
s. Steering Committee on Competitive Research Funding for the Self-financing Degree Sector
t. Assessment Panel for Competitive Research Funding Schemes for the Local Self-financing Degree Sector
u. Disciplinary Committee (Investigation)
v. Disciplinary Committee (Penalty)
w. Humanities, Social Sciences and Business Studies Selection Panel
x. Selection Committee for the National Natural Science Foundation of China/Research Grants Council
y. Selection Committee for the State Natural Science Award
z. Disciplinary Committee

2. Are you currently a Council/Committee/Panel member?
    a. Yes
    b. No

3. How many years have you been or were you a Council /Committee /Panel member for?
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
    h. 8
    i. 9
    j. 10
    k. 11
    l. 12
    m. 13
    n. 14
    o. 15
    p. 16
    q. 17
    r. 18
    s. 19
    t. 20
    u. More than 20

4. Please indicate your academic disciplinary area (can select multiple)
    a. Business studies
    b. Biology and medicine
    c. Social sciences and humanities
    d. Engineering sciences
    e. Physical sciences
    f. Lay member

5. Please indicate your position
    Text entry

6. Please indicate your gender
    a. Male
    b. Female
    c. Other
    d. Prefer not to say

7. Please indicate your age
    a. 20-29
    b. 30-39
    c. 40-49
    d. 50-59
    e. >60
    f. Prefer not to say

Current Funding Schemes

8. Please state the extent to which you agree with the following sentences about the current funding schemes (excluding the HKPFS)

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
They offer the right balance of awards to new investigators and experienced investigators						
They offer the right balance of awards across disciplines						
They integrate research and education appropriately						
They represent the right balance of basic						

and applied research	
They represent the right balance of research topics of local relevance and international significance	
They are the right monetary value for the scope of the projects	
They are the right duration for the scope of the projects	
They are inclusive and do not discriminate based on ethnicity, nationality or gender	
They reflect the needs of the research community	

9. Please state the extent to which you agree with the following sentences about the three group funding schemes: the Collaborative Research Fund, the Theme Research Fund and the Areas of Excellence scheme

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
Within institutions						
Between institutions						
Between disciplines						
Within Hong Kong						
Internationally						

10. There are many criteria which are used in the assessment of research proposals. The list below provides a range of criteria which are drawn from research funding councils worldwide. Please indicate up to 5 criteria you feel should be used in the assessment of grants
Select at least 1 and no more than 5
    a. Academic merit
    b. Benefit to society
    c. Commercial translation
    d. Inter-disciplinarity
    e. Originality
    f. Local relevance of project
    g. Extent to which there is integration of research, training and teaching in the grant

h. Strength of collaborators
i. Track record/merit of PI
j. Personal skills of PI such as communication and leadership skills
k. Level of institutional support
l. Feasibility in implementation
m. Value for money
n. Stakeholder involvement
o. Other

11. Please indicate up to three types of research support provided by the RGC you feel are most important *Select at least 1 and no more than 3*
    a. Research support staff and technical staff
    b. Equipment
    c. Outsourcing of research work outside Hong Kong
    d. Travel and subsistence
    e. Relief teachers
    f. Relief administrators
    g. High-performance computing services
    h. Consumables related to research work
    i. Survey expenses
    j. Conference expenses
    k. Research related software licence/dataset
    l. Research experience for undergraduate students
    m. Other

12. Please list any types of research support not currently provided by the RGC that you feel would be useful?
    Free text entry

The RGC

13. Please state the level at which you agree with the following statements about the RGC

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
It engages with an appropriate spectrum of researchers when it sets its priorities						
It uses appropriate methods for engaging with researchers in the setting of priorities						
It should continue to delegate proposal assessment to Committees/Panels?						

14. Please state the level at which you agree with the following statements about the RGC grant application and review process.

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
It is fair						
It is reliable						
It is transparent						
It is efficient						
It is effective						
The current measures guarding against conflict of interest are appropriate						

15. Please state the level at which you agree with the following statements about the Disciplinary Committees of the RGC.

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
They are effective at reviewing appeals						
They are effective at handling research improprieties						
The current procedures for investigation of alleged misconduct/appeal are fair						
The current level of punishment has sufficient deterrent efficacy						

16. How often do you utilise the following resources of the RGC for getting information and updates on the RGC activities?

	Once a year or less	Every six months	Every three months	Never	Don't know
RGC Annual Report					
RGC Website					

17. Based on any experience you may have had of other national systems for supporting research, what would you recommend to RGC from these systems and why?
    Free text response

18. Is there anything else not covered here that you think we should consider in this study?
    Free text response

Thank you for taking the survey!

Please note that as part of the review of the RGC, we are also running an online consultation. If you feel that there are important points that you have not been able to make here, then please feel free to also take part in the online consultation which you can access here https://smapp2.rand.org/surv4/TakeSurvey.aspx?PageNumber=1&SurveyID=92KL6772&Preview=true# from the 20th of October for 1 month.

If you have any further comments or questions, please email rgc_review@rand.org

D.4. Online consultation protocol

Thank you for your interest in the consultation. The UGC have launched a review of the RGC, to ensure funding is used and managed efficiently and meets the needs of Hong Kong in the field of academic research. In the review we are considering the following broad questions:

Do the current funding schemes:

a) Fit the needs of researchers in Hong Kong?

b) Fit the needs of the wider research community in Hong Kong?

c) Complement other available funding opportunities in Hong Kong?

Is the current RGC structure efficient and effective at:

a) Formulating initiatives that reflect the needs of the research community?

b) Assessing research proposals?

c) Handling disciplinary cases?

What improvements could be made to the current funding schemes and current RGC structure?

In view of this, please could you answer the following questions (all questions are optional):

1. Email address
2. Name
3. Organisation
4. Position
5. What does the RGC do well and what should it continue to do?
6. What problems are there with the RGC funding schemes and RGC structure and what should the RGC stop doing?

What could the RGC start doing to improve its performance?

D.5. Focus Group Protocol

Funding Schemes

1. Do the current funding schemes in your opinion meet your needs/the needs of researchers in Hong Kong [depending if an award holder or HEI manager] and why?

2. In particular what are your views on:

- Balance of awards across disciplines
- Balance of research topics of local relevance and international significance
- Balance of awards across basic and applied research

If these are an issue, how do you think they could be resolved?

3. A number of the RGC's current schemes aim to promote collaboration. What is your view on collaboration:

- Between disciplines
- At an international level
- What could be done to promote greater collaboration in these areas?

4. What specific research support is most important to researchers in your field and why?

5. In your experience how does the RGC engage researchers in priority setting across its portfolio?

- What are the mechanisms of engagement?
- What is the spectrum of researchers that are engaged?

6. Thinking beyond academic excellence and impact to the wider societal benefits of research to Hong Kong and abroad, do you think the current funding reflects the needs of research users? What mechanism do they use to engage with research users?

Submission and assessment process

7. How well do you think the submission process for RGC grants works? How could that be improved/ avoided?

8. How well do you think the assessment process for RGC grants works? How could that be improved/ avoided?

9. How well do you think the appeals process for RGC grants works? How could that be improved/ avoided?

10. How well do you think the RGC does on the following criteria and why?

- Transparency;
- Reliability;
- Fairness;
- Efficiency; and
- Effectiveness

  Do you have any thoughts on how these could be improved?

Optional extra question for all groups except HKPFS and SF

11. As well as schemes for researchers, the RGC also administers the Hong Kong PhD Fellowship scheme. Do you have any views on the process around assessment and award of PhD fellowships?

Concluding questions

12. In your opinion what is the most important thing that the RGC could do differently?

    Is there anything else you wanted to say or add which we have not covered?

D.6. Code book

Parts of the tree	Codes	Subcode	Sub-sub code
1	Needs of researchers	1.1 Balance between basic and applied	
		1.3 Balance of local relevance and international significance	
		1.6 Value of funding available	1.6.3 Value of individual award
			1.6.1 Value invested in research
			1.6.2 Duration of funding
		1.2 Balance between new and experiences investigators	
		1.5 Integrate research and education	
		1.4 Inclusivity	
		1.7 Other	
2	Collaboration	2.1 General	
		2.2 Within institutions	
		2.3 Between disciplines	
		2.4 Between institutions	
		2.5 Internationally	
3	Needs of HK	3.1 RGC within the wider ecosystem	
		3.2 Other	
4	Research support	4.1 Researchers	
		4.2 Teaching relief	
		4.3 Equipment	
		4.4 Travel and conferences	
		4.5 Other	
5	HKPFS	5.1 Mix of local and international students	
		5.2 Balance across disciplines	
		5.3 Inclusivity	
		5.4 Value of support	
		5.5 Type of support available	
		5.6 Other	
6	Parts of the	6.1 Priority setting	

Parts of the tree	Codes	Subcode	Sub-sub code
	process	6.2 Application and submission	
		6.3 Review and award decisions	
		6.4 Post award monitoring	
		6.5 Appeals	
		6.6 Disciplinary	
		6.7 Other	
A	Perceptions	Transparent	
		Fair	
		Reliable	
		Efficient	
		Effective	
B	Views	Positive	
		Negative	
C	Funding schemes	C.1 UGC sector	C.1.1 GRF
			C.1.2 CRF
			C.1.3 Areas of Excellence
			C.1.4 Early career scheme
			C.1.5 Humanities and social sciences prestigious fellowship scheme
			C.1.6 Theme based research
			C.1.7 Joint Research scheme
		C.2 Self -financing sector	C.2.1 Faculty development scheme
			C.2.2 Inter-institutional development scheme
			C.2.3 Institutional development scheme
D	Discipline	D.1 Biology and medicine	
		D.3 Engineering sciences	
		D.4 Physical sciences	
		D.2 Business studies	
		D.5 Social sciences and humanities	
		D.6 Early career researchers	
		D.7 Mid-career researchers	
		D.8 Senior researchers	

Parts of the tree	Codes	Subcode	Sub-sub code
E	International	E.1 Expert	
		E.2 Example	
F	Type of view	UGC-funded	Researcher
			Panel
			Senior managers
		SF sector	Researcher
			Panel
			Senior managers
		HKPFS	Administrators
			Awardees
		UGC Council members	