The development of research culture in Japanese public science: Academic responses to policy reforms

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Overview of Presentation

1. Introduction
2. Analytical methods, research design, or modes of inquiry
3. Data
4. Data Analysis / Findings
5. Discussion, Implications, and Conclusions
Why government policies?
Government policies

• Strong initiatives to set priorities in education and research

• 2011 November
  – Okinawa Institute of Science and Technology Graduate University (OIST)

• 2014 September
  – Top Global University Project (MEXT)

• 2015 April
  – Japan Agency for Medical Research and Development (AMED)
  – Cabinet Office, Government of Japan

• 2016 November and 2017 April (application accepted) – Summer 2017
  – Designated National University “指定国立大学法人”
Government policies

• Top-down system

• Research ethics education (As of Sep 2015)
  – National universities (90% - 90 institutions)
  – Public universities (72.1% - 86 institutions)
  – Private universities (64.3% - 605 institutions)
  – All 1602 responses (97.3 % - keep reviewing and updating)
Why ministries and funding agencies are important?
Responsible Ministries and Funding Agencies

- Financial and resource resources
- Political and scientific objectives
- Political administration and the scientific community
Historical Development

• The End of WW II - 2004
  – Under Ministry of Education, Culture, Sports, Science and Technology (MEXT)

• Since 2004
  – Various policies were initiated to change the governance and administrative system
  – Mobility of researchers
  – Comprehensive evaluation procedures
Japanese public science system

• Japanese public science system

  – 1. Universities
    • under jurisdiction of the MEXT

  – 2. Government research institutes
    • under jurisdiction of the responsible ministries

  – 3. Consortia and collaborative centers
Government research institutes

1. Cabinet Office, Government of Japan
   - medical research
   - “Japan Agency for Medical Research and Development (AMED)”

2. Ministry of Internal Affairs and Communications (MIC)
   - wireless network, cyber security, and other related topics
   - “National Institute of Information and Communications Technology (NICT)”

3. Ministry of Finance
   - alcoholic beverage and other related topics
   - “National Research Institute of Brewing (MRIB)”

4. Ministry of Education, Culture, Sports, Science and Technology (MEXT)
   - “RIKEN”
   - “National Institute for Material Science (NIMS)”

5. Ministry of Health, Labour and Welfare (MHLW)
   - Employment security, child health and development, pension, and others
   - “National Cancer Center”

6. Ministry of Agriculture, Forestry and Fisheries (MAFF)
   - Agriculture, forestry and fisheries industries
   - “Forestry and Forest Products Research Institute”

7. Ministry of Economy, Trade and Industry (METI)
   - Japan’s economy and industry, energy and mineral resources, innovative technological seeds and commercialization, and others
   - “National Institute of Advanced Industrial Science and Technology”

8. Ministry of Land, Infrastructure, Transport and Tourism (MLIT)
   - coast guard, touring industry, and others
   - “Port and Airport Research Institute”

9. Ministry of the Environment
   - environmental policies, and other related topics
   - “National Institute for Environmental Studies”
Why government research institutes?
Data by MEXT in 2016

- Misconduct cases (Fabrication, Falsification, Plagiarism) by MEXT in 2016
  - 7 cases (6:1)

- Misuse of Public Research Funds by MEXT in 2016
  - 4 cases (1:3)
2. Analytical methods, research design, or modes of inquiry
Theoretical/conceptual framework

1. Pertaining to legal status of institutions
2. Funding guidelines and opportunities
3. Recruitment of academic staff
4. Resource allocation
5. Research assessment
Analytical methods, research design, or modes of inquiry

• Qualitative Research (explanatory)

• Systematic analysis of the documents to derive patterns, models, or principles

• 2016 - 2017
  – National universities: 5 (2 - not in this study)
  – Government research institutes: 2
Analytical methods, research design, or modes of inquiry

• Data Analysis
  – A. Coding (Predefined codes / Open codes)
    • a. Break the data into the measurable chunks
    • b. Unit of analysis
    • c. Discourse analysis
  – B. Categorizing
    • Look for patterns or groupings in the codes
    • Obtain transferable dependable conclusions
  – C. Modeling
    • Geographical mapping to create categories
    • It can be braced back to original data
3. Data
Data

- The University of Tokyo (JSPS 1 / Nature 1)
  - (44.54% D - 55.46% I)
- Kyoto University (JSPS 2 / Nature 2)
  - (51.6% D - 48.4% I)
- Tohoku University (JSPS 4 / Nature 4)
  - (52.23% D - 47.77% I)
- Osaka University (JSPS 3 / Nature 3)
  - (50.56% D - 49.44% I)
- Nagoya University (JSPS 6 / Nature 7)
  - (43.33% D - 56.67% I)
- RIKEN / MEXT (JSPS 18 / Nature 5)
  - (53.48% D - 46.52% I)
- National Institute of Advanced Industrial Science and Technology (AIST) / METI - (JSPS 23 / Nature 12)
  - (66.05% D - 33.95% I)
4. Data Analysis / Findings
Universities and GRI

• **Universities:**
  - Rules, guidelines
  - Action plans
  - Committees
  - For INTL
  - Educational program competitions - “Research ethics week”
  - Online training mandatory (partial or comprehensive)

• **GRI**
  - Rules, guidelines
  - “Responsible Conduct in the Global Research Enterprise” by Inter Academy Council (IAC)
  - SOP (sexual harassment, bullying, purchasing process, and others)
  - Administrative training (MGMT)
  - iThenticate (since 2014)
5. Discussion, Implications, and Conclusions
Implications

- For funding agencies
- For academic institutions
- For researchers
- For academic societies
Discussion and Conclusions

- Responsible ministries (MEXT and others)
- University and government research institutes
- External stakeholders - leading experts or professionals in leadership teams
- HR (experts in research ethics and integrity)
Concluding Thoughts

1. Cabinet Office, Government of Japan – (1)
2. Ministry of Internal Affairs and Communications – (1)
3. Ministry of Finance – (1)
4. MEXT – (8)
6. Ministry of Agriculture, Forestry and Fisheries – (4)
7. Ministry of Economy, Trade and Industry – (3)
8. Ministry of Land, Infrastructure, Transport and Tourism – (3)
9. Ministry of the Environment – (1)
Selected References
(Data only – Literature Review not included)


Selected References
(Data only – Literature Review not included) continued


Thank You!

Questions?
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