

# PROGRAM ASSESSMENT

## FAPESP IMPACTS SERIES

### EMU - MAIN RESULTS

#### Program's General Information

- Assessment period: 1998 – 2009.
- Completed in 07/2012.
- A total of 439 questionnaires were answered.

This document is part of a set of summaries presenting the results of impact assessments performed for the FAPESP programs. The full document and assessment can be seen at <http://www.fapesp.br/avaliacao/relatorios/emu.pdf>

The EMU is a modality that was incorporated in 1996 to the Research Infrastructure Support Program created in 1994. The main purpose of the program is to support research infrastructure in the state of São Paulo. Within this aspect, EMU - Multi-user Equipment - has the purpose of acquiring high-cost equipment that can be used by several researchers from different departments. From 2004, EMU became an Autonomous Program inserted in FAPESP's Special Program line. One important characteristic of EMU is that its projects do have one coordinator and 2 more PIs. All grants are more or less managed by 3 senior researchers.

For the analysis of the impacts of the Program, a quasi-experiment was designed, comparing three kinds of groups: coordinators of awarded projects, PIs of awarded projects, and rejected projects and their coordinators and PIs.

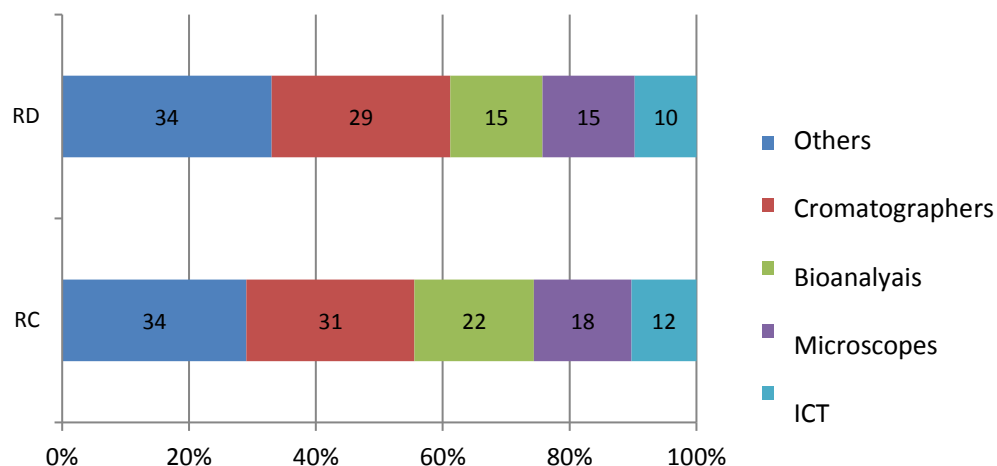
The financing of equipment considered as of high-cost allows the researcher to expand his research field. Besides supporting the acquisition of equipment, the program also provides support for the installation and operationalization of equipment, as well as input material considered essential to its operation.

The requests made to EMU have an average term of two years. The base of the analysis is comprised of projects that were approved and rejected between 1998 and 2009. The awarded projects amount to 186; while other 245 were not approved. The control group is constituted of researchers that had their projects denied. The treatment group is comprised by the PIs of awarded projects, usually in number of 2 PIs plus one coordinator. Actually, methodologically speaking comparisons or outputs and outcomes were of two types: awarded coordinators vs. awarded PIs; and awarded projects vs. rejected projects.

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#### Profile of equipment

Responses to the questionnaires showed a diversity of types of equipment requested. Graph 1 shows the main equipment requested.



Graph 1 -- Categories of Equipment.

The main reason that leads researchers to request equipment is the introduction of a new research line/theme.

For researchers that had their proposal rejected, 50% sought to acquire the equipment applying to other funds while the other half did not acquire the equipment. Table 1 shows financial sources searched by applicants. Table 1 shows that even for projects that were not financed by EMU, FAPESP was still the main financing agency for equipment through other support programs.

Table 1 -- Financing source that allowed the purchase of equipment equivalent to the one requested in the EMU program.

Source	Answers
CNPQ	6
FAPESP	18
FINEP	5
Others	4
<i>Grand Total</i>	33

### The Multi-User factor.

Graph 2 shows the main user of equipment in a time period of five years are researchers from the same Department projects coordinators belong to. The intensity of use by the Department decreases during the time period, but without substantive changes.

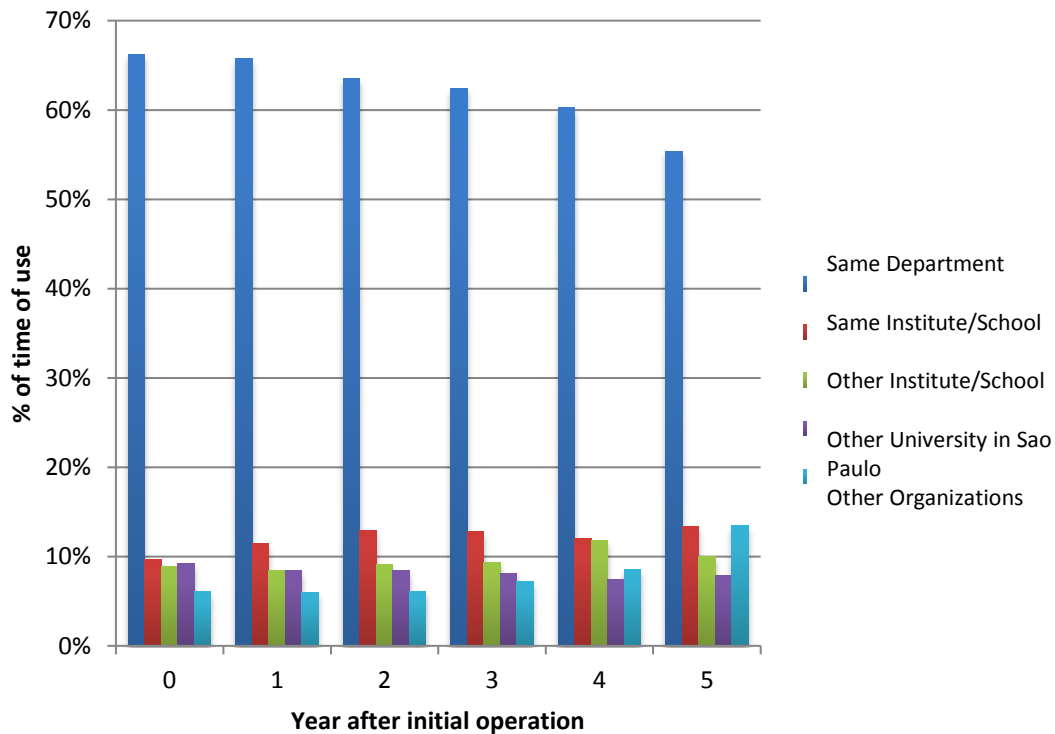


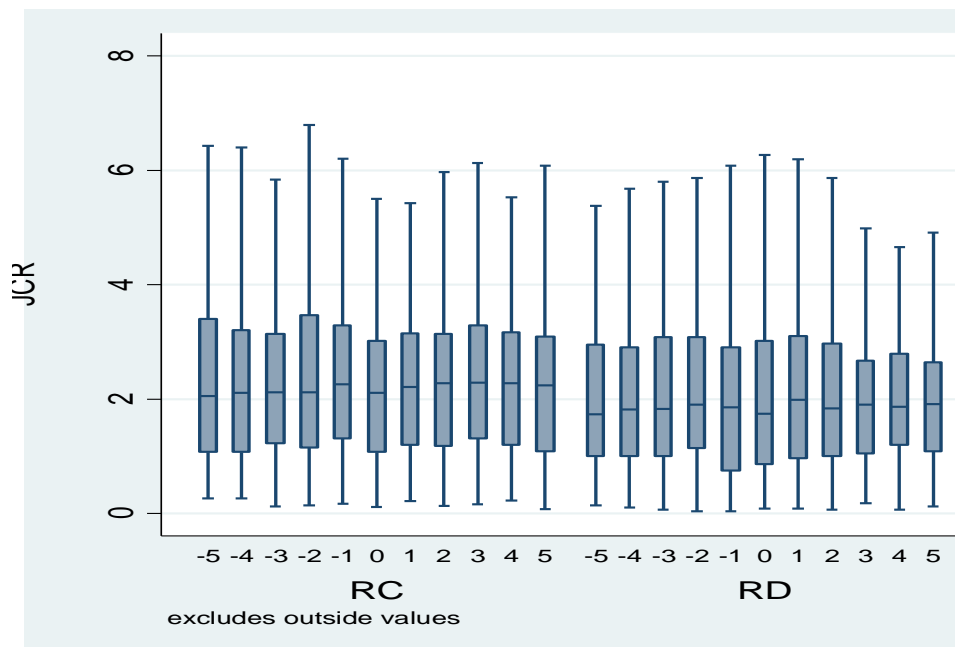
Gráfico 1 – Who uses the equipment? (% in a period of 5 years after instalation).

Comparing the performance of researchers in terms of scientific and academic production, Table 1 shows an interesting finding. Regarding number of theses and dissertations, researchers of EMU awarded projects produced about  $\frac{3}{4}$  comparing to non-awarded researchers. Regarding total number of articles per researcher (those not exclusively published as a result of EMU project), EMU awarded researchers presented a weighted 11% more articles than non-awarded. No other significant results were found as shown in Table 1.

Table 1 – Quasi-experimental effect of academic production comparing awarded coordinators and PIs against rejected coordinators and PIs

	Coordinators				Pis			
	Effect	P-value	IC 95%		Effect	P-value	IC 95%	
Articles published as direct output of the EMU project	0.92	0.52	0.70	1.20	0.87	0.26	0.69	1.11
PhD theses as direct output of EMU project	<b>0.77</b>	<b>0.04</b>	<b>0.61</b>	<b>0.98</b>	0.87	0.29	0.68	1.12
Master dissertations as direct output of EMU project	<b>0.73</b>	<b>0.01</b>	<b>0.58</b>	<b>0.91</b>	<b>0.71</b>	<b>0.00</b>	<b>0.57</b>	<b>0.88</b>
Total number of articles	<b>1.11</b>	<b>0.36</b>	<b>0.89</b>	<b>1.38</b>	<b>1.14</b>	<b>0.27</b>	<b>0.90</b>	<b>1.43</b>
Co-authors in publications	1.33	0.04	1.01	1.74	1.30	0.06	0.99	1.71
Total PhD theses	0.95	0.71	0.75	1.22	1.14	0.29	0.89	1.46
Total Master dissertations	0.89	0.33	0.71	1.12	0.98	0.84	0.80	1.20

Regarding the qualitative analysis, the journal impact factor (JIF) was analyzed and none significant differences were found between awarded and non-awarded researchers. Graph 3 shows the distribution of JIF of journals in which articles were published.



Graph 3 – Distribution of impact Factor of journals (JCR) (Year=0: year in which equipment starts operational). RC= Awarded Coordinator, RD= Rejected Coordinator.

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## Conclusion

The level of multiuser factor still has to evolve towards researchers from other Institutes and Universities/Research Centers. The quasi-experiment shows a slightly higher number of publications for those awarded by the program, but a lower number of PhD theses and MSc dissertations. Regarding Journals Impact Factor, no differences were found.