End of AY 2016 Report for SIP – Group2

Project Title

Survey on the Role of Medium and Small Size Enterprises to Aviation Industries and Public Policies to Promote their Growth

Team

GSDM ID	Name	School	Department	Year (e.g. D1)	Leader/ member
14112	Fuminori Yanagimoto	Engineering	Systems Innovation	D1	leader
	Nobuyuki Sakai	Public Policy		D1	leader
15119	Yoshihiko Suzuki	Frontier Science	Computational Biology and Medical Science	M2	leader
15104	Haruku Shirahata	Engineering	Chemical System Engineering	M2	member
16117	Cheng-Han Yeh	Engineering	Mechanical Engineering	D1	member
16116	Akifumi Wachi	Engineering	Aerospace and Aeronautics	M1	member
	Kenshiro Oguri	Engineering	Aerospace and Aeronautics	M2	member

Objective: Explain what social/global issues that this project tried to address and why the issue is important.

This project has two objective. One is to study how to promote the activity of the small and medium size enterprises that hope to enter the aviation industries from the respect of public policies. The other is to learn the public policy and knowledge network through the case of this industrial cluster and the situation of aviation industries. We think GSDM is the platform to widen our knowledge and view from the aspect of interdisciplinarity and integrating the wide knowledge. This project is much suitable for this GSDM purpose.

Method: Explain through what kind of approaches you tried to achieve the objective.

This SIP follows the past SIP in FY2015. We conducted 2 interviews to know present situations of the enterprises challenging to enter the aviation industries and document surveys. Although, at first, we considered to have some interviews with experts in governments and large size enterprises working on Japanese aviation industry, documents survey in this year showed us that understanding present behaviors of Japanese aviation clusters should be deepen prior to interviews with specific experts. Thus, eventually, the method adopted in this SIP were as explained below;

1. Document survey was done to know the fundamental knowledge and trends on industrial clusters and aviation industry. Additionally, to consider the way to investigate the aviation cluster quantitatively in the future, some studies using quantitative methods were investigated.
2. Information from open media such as their website and newspaper articles were collected and some features of Japanese aviation clusters were studied.
3. Foreign successful joint projects and clusters were investigated through journals, documents and open information. Brazilian case, which is Brazilian Aerospace Clusters, was studied to compare foreign cases and Japanese clusters.

Outcome: Explain what kind of results you obtained from this project and discuss how it addressed your focal social/global issues.

1. This SIP provided the participants some opportunities to study aviation clusters from the perspectives of public policy and knowledge management. This aspect is one of most important objectives of our SIP much suitable for GSDM objective in our mind.
2. Our investigation on the clusters implied that Japanese aviation so-called "clusters" do not have innovation functions and they only focus to achieve the new entry to aviation industry and joint product ion.
3. Joint projects with different degrees of co-production and joint ventures would lead to different results of economic performance and technical quality. Surveys on many examples of joint projects showed that under the strong structured co-production projects, the products came out with good technical quality with great commercial success and financial outcomes compared with unstructured ones.
4. Through the study on Brazilian case, some major differences were obtained, e.g. the grants for R&D projects, and strong binding between enterprises, universities, and local/state government. Although the cluster structure might seem the same, which comes with one major primary contractors, Embraer, and many small, medium-sized enterprises which take 77% of the industry share and 91% of subcontractors and equipment manufacturers, these differences lead to the success of Brazilian aviation industries with the open innovation.

This is symmetrical feature compared to foreign cases. And, the clusters were often established under support of public sectors such as local government, but there are only a few cases to collaborate with public sectors with technological capabilities such as universities. Thus, to enhance the competitive edge of Japanese aviation industry, it is needed to provide R&D innovation capabilities to each clusters. One way to achieve such goal is to promote the collaboration between universities and the clusters because prefectures in Japan often have universities with engineering department.

As explained in "Method", we changed the plan based on document survey and investigation on Japanese clusters were conducted after the document survey. This investigation needed a long time and prevented us from holding IELs or academic presentation. We are now considering some presentations in low-cost conferences such as IEEE tower hold near Tokyo instead of the IELs in this FY.

Budget: List the budget this project implemented..

Purposes	**Expense**
Books	0
Travel fee	0
Honorarium	0
Others	0
Total	0