COMPLETION REPORT

SWOT (Strength Weakness Opportunity Threat) Analysis in Strengthening Women Involvement in STEM (Science, Technology, Engineering and Mathematics) University Research: Comparison between Japan and Malaysia

Dr. Zahiraniza Mustaffa
Senior Lecture
Universiti Teknologi PETRONAS

This research compared women involvement in STEM fields at university research through **SWOT** (Strength Weakness Opportunity Threat) analysis carried out for Japan and Malaysia. The outcomes of this research highlight six factors which will be elaborated accordingly. First, **underrepresented in leadership positions** was reflected by the small pool of women research icons. Second, factors associated to families are reported to be a concern leading to the **work-life balance**. Herein, the childcare system has been addressed in Japan national policies, but still become an issue. Malaysian women had somehow managed to handle this issue accordingly although no policies have been put in place. Third, in terms of **population growth**, Japan is approximately 10.9% bigger that the size of Malaysia, but having 319% of more populations. There are more women in Japan, giving an average sex ratio of 0.94 males to per female. Fourth, in terms of **technology innovation**, Japan stood at 24 ranks better than Malaysia according to the Global Innovation Index (2017). When this becomes an advantage, it also creates disadvantages due to the rise of the Fourth Industrial Revolution, which is in preference to the job families associated to the STEM professions. With Japan having more women, not using them means not capitalizing at least 50% of labor force that can contribute to nation building. Fifth, in the aspect of **governance and policies**, STEM awareness has taken place in Malaysia even before the country obtained its independence, part of which influenced by ruling of different colonialists. Japan had only initiated such in 1995. Japan may require 50 years in arriving to similar target of having women involvement in STEM. The sixth factor *i.e.* **religion**, Malaysia with many of its people being Muslims, holds a unique characteristic from such beliefs. The people have always been practicing the Islamic values in their work lives and actions. The evidence of science evolvement captured in the Quran has established the right initiation to the beliefs and continue to provide strong roots to the Muslims practice and well-being. In conclusions, women involvement in STEM at university research in Japan has been highlighted in the governance and policies despite their late start. It will take another 50 years for Japan to catch up when compared to Malaysian women development. The technology strengths in Japan may be able to shorten the duration if properly planned towards this need.

Publication of the Results of Research Project:

Verbal Presentation (Date, Venue, Name of Conference, Title of Presentation, Presenter, etc.) *Not applicable*
Thesis (Name of Journal and its Date, Title and Author of Thesis, etc.) Thesis: **SWOT Analysis in Strengthening Women Involvement in STEM (Science, Technology, Engineering And Mathematics) University Research: Comparison Between Japan And Malaysia, Zahiraniza Mustaffa, 2017, 44 p.** Journal: **Women Involvement in STEM: Comparison Between Japan And Malaysia, Zahiraniza Mustaffa, Noriko Inuzuka, Adida Mohd Johan, *submitted to Gender and Society journal.***
Book (Publisher and Date of the Book, Title and Author of the Book, etc.) *Not applicable*