Graduate Job Markets, Higher Education Policy and Employment in Japan, Malaysia and Mexico

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I. Introduction

The study of human resource formation and its role as one of the main drivers of development is the main interest of this paper. Many theories explicitly connect investment in human capital development to education, and subsequently to economic development. The present paper offers a comparative analysis of the job market for graduate students in three Asian Pacific countries, Japan, Malaysia and Mexico. It employs a method that enables us to look into similarities and differences in an international perspective, and also to address those countries' historical characteristics. Likewise, it not only considers higher education linkages to the private sector as the relationship between higher education institutions (HEI) and the job market and, but also the development of new technologies through R&D and the need for an education system to evolve in order to stay abreast with the global trends and job market demands, especially in certain areas such as IT, and automotive and high-tech industries that are expected to dramatically shape the business as well as social landscape of each country.

Our study certainly deals with the actions and policies that countries have followed regarding economic and educational planning, and how those actions and policies have been applied in these three countries' educational institutions and graduate job markets, that is to say, it will reveal the relationship between employment supply and demand. This paper gathers the views of interviewees from different sectors of society, including government, business and academia by conducting a survey.

In this era, characterized by globalization and the knowledge society, it is indispensable to count on better-educated and qualified human resources to significantly increase productivity, as well as contribute to a better understanding among human beings, based on tolerance and respect among nations. Consequently, skillfully trained human resources contribute substantially to the competitive development of key industries and thus improve the quality of life for people.

Additionally, the involvement of government and society in the efficient design and implementation of public policies should serve to effectively lead societies towards development, a task in which graduates play a very important role. Unfortunately, it is often observed that well-educated people face the harsh reality of being unemployed, which is a common situation across countries. Nevertheless in order to secure a job, an increasing number of high-school graduates decide to go onto tertiary education, and particularly onto higher education, as acquiring a college degree is perceived as the key to enter favorably the job market. For this reason, this paper will specifically focus on higher education, where undergraduates receive the knowledge and training required to enter the labor market under better conditions.

Based on the methodology developed in previous research projects (Rangel and Ivanova, 2008; Rangel and Ivanova, 2012), the purpose of this study is to shed light on the connection between higher education and employment in Japan, Malaysia and Mexico, in a transpacific framework as APEC and other economic integration patterns, in the hope that it can contribute to policy design and its implementation in each country.

The central assumption of this paper is that the information provided by the official sources is not

sufficient to assess the implementation of higher education and employment policies. It is important to address young-graduate unemployment, so that significant changes can be made to higher education system of these three countries, in order to produce highly skilled human capital required to increase efficiency and competiveness. We hope to contribute with the process of study and reflection necessary to develop more comprehensive plans in the area of education and economic development for the Pacific Basin countries. Furthermore, we hope the information provided could strengthen the dialogue among networking countries, in the near future.

II. Methodology

The Development Plans or similar official guideliness of the three countries, as well as international and domestic analysis on the relationship between higher education and employment are our main secondary sources. On the other hand, one of the most important primary sources for this research is the result of the survey, which was conducted by applying a questionnaire. The questionnaire was designed to gather opinions of a select group of researchers, officials and executives, from the academia, government and private sector, respectively. The questionnaire consists of 37 items that are organized in the following clusters: 1. Subject Information, 2. Assessment of Higher Education Policies, 3. Assessment of Employment Policies, 4. Assessment of Economic Policies, 5. Assessment of Science and Technology Policies (see the Appendix for more detail). Other related literature such as Cogan (2004), Rangel and Ivanova (2008 and 2012), and Tullao (2014) have also been employed.

The comparative method has proved useful in the study of international relations (Rivas Mira and Garcianava, 2004). Given the international context in which this study has been done, we intend to use the comparative method to address specific issues such as public policy in the field of higher education, employment and other related topics, according to their development in Japan, Malaysia and Mexico. Finding differences and similarities is useful for those countries seeking to make the best decision through economic policy, which in turn not only has an impact on university enrollment, but also on the household aspirations toward higher education, and on the shared responsibility of public and private sector to generate quality jobs.

The comparative method developed by the Italian school of Giovanni Sartori (2002) and other followers have formed a useful methodology for decision-making. One of the most significant questions the comparative method attempts to answer is why to compare?. Building a methodological argument allow us not only to come up with concepts and definitions to describe, formulate and test hyphotheses, in order to better understand the overall context in which the economy operates, but also to explain a particular case by taking into account specific conditions that are determinant for the case regarding the addressed isssues, which could fall into misleading generalizations otherwise.

The comparative method involves parameters collected from comparable cases and the use of categories of analysis derived from the theoretical framework and other conceptual schemes. In this regard the comparative method was established as part of the social sciences in general, intending to understand, explain and interpret a specific object of study, while considering aspects that highlight good practices.

Regarding the question how to compare, the comparative method suggests a range between 2 and 20 cases. Statistically speaking the sample was neither randomly selected nor comprised by a large number of subjects, therefore biases and distorsions (generalizations) can threat statistical reliability. For that reason, the hypothesis control becomes a highly needed methodological tool. Our three selected economies are considered in the context of APEC and its role in the construction process of integration schemes such as the TPP or FTAAP, as binding-driver axis among participants.

Control hypothesis becomes more important given

the statistically small sample size that can easily lead to erroneous generalizations. The hypothesis design arises from the structure of a formal logic, in which the dependent and independent variable approach, or quantitative and qualitative variable approach lead us to more robust explanatory analysis of the object of study, that in turn entails answering the question why?.

III. Government Policies

This section presents the government stance regarding higher education policies and employment. In order to do that, official documents were reviewed such as the white papers from the Ministry of Education, Culture, Sports, Science and Technology, and Ministry of Health, Labor and Welfare for Japan, the National Higher Education Strategic Plan for Malaysia, and Sectoral Programs within the National Development Plan for Mexico.

1. Higher Education Policy and Employment in Japan

According to the Ministry of Education, Culture, Sports, Science and Technology (MEXT), "from a mid-to long-term perspective the Japanese higher education should meet broader and more diverse expectations and demands posed by two drastic and continuous changes. The first refers mainly an external force that surrounds and influences Japan, and the second is related to Japanese society and its demographics."

Globalization has challenged the domestic-oriented Japanese labor market. During the period of accelerated growth, Japan was regarded as an economic model, whose most salient determinant factor was precisely its human resources that made possible the "Japanese miracle." Moreover, being largely devoid of natural resources to fuel its growth process, Japan's human capital has been the force its postwar economic performance has rested on. Nowadays, it is observed an urge for the internationalization of Japanese society, particularly in higher education. As globalized human resources are more demanded, Japanese government, in particular through MEXT, states the importance of internationalization by introducing classes in English and promoting in-bound and out-bound international student exchange programs such as "300,000 International Students Plan," aimed at accepting 300,000 international students by 2020; "Global 30," whose main purpose is to develop 30 Universities as centers for internationalization; "Top Global University Project" that will support 30 universities that have the potential to be ranked in the top 100 in world university rankings, and the universities that lead the internationalization of Japanese society; and"TOBITATE! Young Ambassador Program,"a Japan Public-Private Partnership Student Study Abroad Program).

Along with this internationalization process and following the same direction of other advanced countries' changes in higher education, it also can be observed a universalization trend (the percentage of students enrolled in universities, junior colleges, colleges of technology and specialized schools is 80%). However, differently from other advanced nations, there is a gradual privatization in the Japanese educational system, that intensifies at higher education, in which private universities accounts for about 80% of all universities and have about 80% of all university students on their registers. On the other hand, national universities have been reorganized as corporations since 2004, aiming to improve each university's independence and autonomy to enhance education and research activities.

The Ministry of Labor, Health and Welfare of Japan (MLHW), through its white papers, clearly considers human resources as the most important world-class resource of Japan, where structural changes such as globalization, population decline and aging population and economic stagnation are challenging both, the demand and supply side of the labor market.

The same ministry points out the challenges faced by university students, because they do not cope with the companies' demand for human resources. According to the MHLW, when recruiting young people, companies are placing more emphasis on

personality, such as enthusiasm, ability to take action and cooperation. Among the fundamental competencies for working persons, a competency that companies consider is lacked by young employees is the ability to approach and deal with others, followed by creativity, initiative, problem-finding ability, ability to transmit messages and planning ability.

In a macro perspective, according to MHLW, there is a concern that academic skills of university students are declining; and students must make efforts for improvement of basic academic skills. during their school lives, in order to have the opportunity to reach the real recruitment process, including job interviews.

Regarding human resource development, the MHLW only refers to on-the-job training conducted by Japanese companies, and there is no relationship with tertiary education institutions. Moreover, human resource development is linked to the development and improvement of vocational abilities that are further developed through occupational life by accumulating human capital through work experience.

Finally, the MHLW addresses this lack of connectivity between tertiary education and companies, by demanding universities to improve students' abilities and promote student internships, thereby help the students to develop career views, and companies to make further efforts to more clearly define what kind of human resources they are seeking. As for the government, its role is to promote employment of young people, by strengthening collaboration and information sharing among organizations of small and medium-sized enterprises, Hello Works, universities, and other entities.

2. Malaysia: National Higher Education Strategic Plan

It considers both the Malaysian Education Blueprint for Higher Education MEB (HE): 2015-2025 and the Graduate Employability Blueprint GE Blueprint: 2012-2017. Regarding the MEB (HE) "The Malaysian higher education system has grown from strength to strength over the past few decades. Over the last ten years alone, the system has made significant gains in student enrollment, risen in global recognition on key dimensions such as research publications, patents, and institutional quality, as well as become a top destination for international students. These achievements are a testament to the drive and innovation of the Malaysian academic community, the support of the private sector, as well as the deep investment the Government has made. Nonetheless, the Ministry of Education (the Ministry) recognizes that the system will need to keep evolving to stay abreast with, if not ahead of, global trends. For example, disruptive technologies such as advanced robotics, the Internet of Things, and the automation of knowledge work are expected to dramatically reshape the business and social landscape from what it is today. Preparing Malaysian youth to thrive in this complex and ever-changing future will require an equally fundamental transformation of how the higher education system and higher learning institutions (HLIs) currently operate. In 2013, the Ministry thus began developing the Malaysia Education Blueprint 2015–2025 (Higher Education) or the MEB (HE). Over the course of two years, the Ministry drew on multiple sources of input, from Malaysian and international education experts, to leaders of Malaysian HLIs and members of the public. The end product is a blueprint that was developed by Malaysians, for Malaysians, and that will equip Malaysia for the final leg of its journey towards becoming a high-income nation." (Ministry of Education Malaysia, 2015).

Malaysia considers an additional issue regarding to differences between employability and employment. As the mission of the Graduate Employment Blueprint is to produce highly employable graduates, it is vital to understand the definition of the two most important terms: Employment and Employability. Firstly, employment is defined as the potential to secure a job at a workplace while employability is defined as the potential to secure, maintain, and grow in a particular job at the workplace. Therefore, it is crucial for the industry and the university to understand the importance of these two terms in order to enhance graduate employability in Malaysia. (Ministry of

Higher Education Malaysia, 2012).

A review of literature suggests that employability is about the work employability and the ability of being marketable in the industry. In other words, employability is about being adept at getting and keeping a fulfilling job. It is about the potential of obtaining and building a fulfilling career through continuous development of skills that can be applied from one employer to another; it is about possessing the sets of attributes and skills that match those required by industry; it is about taking the responsibility for self-development through learning and training, either through the employer or self initiatives; it is about adopting the concept of life-long learning and; it is about being employed according to their level of qualification, functional competencies and being awarded accordingly in terms of their wages and benefits. While employment: It is a contract between two parties - one being the employer and the other being the employee. (Ministry of Higher Education Malaysia, 2012). So the analysis as we understand in the project is close to employability better than employment as it is for the Malaysia case.

The Minister of Higher Education of Malaysia (2012) through the GE Blueprint: 2012-2017 says, "The subject of graduate employability in recent years has become an issue of concern. The publication of this Graduate Employability Blueprint, the result of many months of deliberation and discussion by key representatives from academia, the public sector and industry players, therefore is timely. Prospective employers complain of fresh Institution of Higher Learning (IHL) graduates lacking the prerequisite attributes; more than 50% of fresh graduates are deemed to be unsatisfactory in English communication skills, and yet, many of these young, inexperienced job-seekers expect unrealistically high starting salaries. On the other hand, some IHL managements blame employers for their reluctance to invest money and time in staff training and development. Caught between these two arguments, some IHL managements fail to recognize their shortcomings and their graduate employability rates remain poor or unimproved. All parties involved in the preparation of future employees and those involved in hiring personnel, should have their finger on the pulse of the current employment market; being aware of the supply-demand equation and knowledgeable of the realities of the real working world. It is hoped that this Graduate Employability Blueprint with comprehensive details of the various aspects of the employment market, including employer expectations, by way of survey findings, charts and graphs and useful pointers will both inform and inspire IHL managements to place greater emphasis on the proper preparation of their students, ensuring that they are equipped with the adequate exit attributes."

At the same time the General Secretary of the same ministry mentions "As a fast growing and open economy, Malaysia is faced with the challenge of a more competitive employability landscape and the increased need for 21st century skills especially for the graduates of Institutes of Higher Learning (IHL). In essence, the IHL system has to be responsive to the growing demand for more employable graduates to continue to help propel the various industries with creativity and innovations. In this regard, the Ministry of Higher Education (MOHE), with the close collaboration of industry and IHL, has developed a blueprint for Graduate Employability (GE) that leverages the strengths of IHL to address the challenges by refining its charter and focusing its resources on road maps for enhancing Graduate Employability Competencies (GEC) and incorporating the Employability Attributes Framework (EAF). The National GE Blueprint draws on the expertise and experience of over 100 participants from industry, IHL and government agencies. Though just serving as a guide, the blueprint positions the GE agenda in a central role to address the crucial need for graduate employability in Malaysia.

In the same way the Ministry of Higher Education (2012) through its director general of the Higher Education Department says, "As higher education remains a cornerstone in Malaysia's development, it has become imperative that IHL graduates become more employable within the growing economy. This

National Graduate Employability (GE) Blueprint is stipulated to serve as a guide to what IHL graduates need to know and should be able to do with respect to their employability attributes. Initiated by MOHE, contribution of ideas came from industry players and academia in several discussions and two intensive workshops in Kuala Lumpur and Langkawi. Their ideas and suggestions were compiled into a document. This was accomplished over a period of four months. The document was then duly reorganized, edited, and reformatted. Although it is well known that aspiring graduates want to be better qualified, the emerging industrial need is for higher learning outcomes that are closely calibrated with the challenges of a complex and vibrant economy. Based on a refined charter and distinct road maps, this Blueprint recognizes that GE Attributes are important for all graduates to acquire and should be fostered and developed across the entire IHL experience. In short, the Blueprint provides a new framework for IHL to navigate and guide graduates' cumulative progress and curricular alignment throughout their years in IHL. This Blueprint further allows for each individual IHL to devise its own internal mechanisms and use its own wisdom to accomplish the expected outcomes of an enhanced GE as guided by the framework and road maps in the blueprint."

3. Higher Education and Employment in Mexico

Certainly the Sectoral Education Program refers to the third constitutional article in which it is established that public education in Mexico is secular and free, moreover under the constitutional reform of February 2013, education quality must be ensured. Today, Mexico faces an international situation that poses the challenge of being inserted properly into the globalized world, which is experiencing a rapid advance of knowledge in the past had been unexpected. The country´s development in the coming decades will depend largely on its ability to meet the challenges that the knowledge society poses. Sport, culture, science and technology should be strengthened as part of the educational effort as a whole, through the involvement of specialized bodies in each of these areas: The National Commission of Physical Culture and Sport (CONADE, in Spanish), the National Council for Culture and Arts (CONACULTA, in Spanish), the National Council of Science and Technology (CONACYT, in Spanish), respectively.

Taking into consideration the importance of the relationship of the different educational levels with the job market, the Sectoral Education Program 2013-2018 (Diario Oficial de la Federacion, 2013) considers that upper secondary education, higher education and job training should be strengthened to contribute to the development of Mexico. Young people is formed to achieve the competences required for the democratic, social and economic advancement of the country. They are essential to build a more prospeadrous and socially inclusive nation and to achieve an advantageous insertion into the knowledge-based economy. Higher education is one of the main values for a country´s social, political and economic development. Today Mexico has a diversified and broad-national presence system of higher education that allows a great higher education coverage. Demographic issues are raising conditions for designing a proper public education policy.

The Sectoral Education Program 2013-2018 (Diario Oficial de la Federacion, 2013) considers that in the quest for greater consistency between education and the job market, the country has made various efforts to provide appropriate education, but still far closer to the social and economic requirements. The National Development Plan provides favorable conditions for progress in this direction. The importance given to productivity as a hub for economic development should lead to greater links between schools and social and needs. Greater diversity of educational opportunities and new models of cooperation to facilitate learning, internships and employability should contribute to these purposes. The possibilities of such cooperation are larger in highly productive sectors that require greater use and development of knowledge. This effort should be complemented by labor market studies, monitoring graduates, and measurement of the extent of engagement and new forms for identifying acquired skills.

Meanwhile the Sectoral Program of the Ministry of Labor and Social Welfare 2013-2018 (Gobierno de la República de México, 2013a) believes that the globalization of the economy and technological advances has transformed the organization, contents and pace of work as well as the structure and dynamics of labor markets. Ceratinly in Mexico, training and job-training is a constitutional obligation that every company has to add to their productive processes, so that regardless of their activity, they must provide their workers with sufficient conditions for human resource development. Furthermore, given the technological changes that are transforming the organization of work and job skills that demand a knowledge society, it is required to develop work skills that result in greater employability (satisfactory income, job promotion and job mobility) and innovations in the workplace.

As Mexico is attempting to be inserted favorably into globalization, the Global Value Chains (GVC) strengthen the country's competitiveness. However, logic and dynamics of GVC is a challenge to the government especially for operating policies that enable them to reap the benefits of this new form of productive organization that are translated into greater competitiveness, while avoiding protectionist policies that ignore the interconnected nature of global production processes and the need for international competition. Greater integration of Mexico to the GVC has deep implications for the development of the economy and for rethinking higher education. This relationship as well as access to new export markets, and consolidation of those in which it already has, must be based on productivity, innovation, capacity building and human capital with competences that allow labor flexibility.

IV. Field study results

As the information provided by the official sources is not sufficient, based on a questionnaire that served as a tool for data collection from scholars, government officials and private sector respondants, our research team elaborated a database to assess the implementation of higher education and employment policies. The survey and database have been applied and modified over approximately 4 years, and three countries were the field for colleting information: Japan, Malaysia and Mexico. The methodology employed in this study is based on a modified questionnaire that was used in previous analysis (Rangel and Ivanova, 2012). Modifications were made during 2013 and updated during 2015. The subjects, who were randomly selected, were then contacted personally and by email asking them to participate.

Subjects accepting to participate were sent the questionnaire directly or by email, and were given sufficent time to fill out the questionnaire at their convenience, or were personally interviewed, following the methodology employed by Cogan (2004), and the comparative method (Sartori, 2002). The questionnaire was designed to gather perceptions of a select group of renowned academicians from universities and research centers, government officials from pertinent ministries (education, higher education and employment) and agencies, and business executives from the entrepreneurial sector, in the three economies, that is to say, interviewees directly involved and concerned with the elaboration and implementation of national policies. After identifying a certain number of potential survey subjects, all recognized leaders in their respective areas, survey participants were selected randomly.

The purpose of the questionnaire was to gather quantitative and qualitative information about the subjects' knowledge on the existence of higher education policies and their linkages to employment, economic development, and innovations in science and technology. Consequently, the questionnaire also included open-ended questions that permitted the interviewees to provide additional, or more indepth comments. The survey participants were also asked about the application and coordination of policies and to what extend they thought they promoted professional development and provided highly trained professionals, who can meet the needs of the private sector and contribute with research and development in the area of science and technology.

1. Higher Education Policies

Table 1 shows that most of the respondants agrees on the existence of current educational policies in their respective countries (more tan 80%). While the interviewees in the three countries believe that their economies have to develop more professional careers on engineering and technologies, Malaysian interviewees showed also a preference for management and marketing.

Regarding the quality and supply of the graduates, respondents in Japan and Mexico reported that higher educational institutions are not offering quality graduates (unsatisfactory), while interviewees from Malaysia stated that there is an appropriate supply of them.

The three countries' interviewees differ regarding the main abilities and skills students must develop. In Japan and Mexico, repondents consider that emphasis should be placed on analytical capabilities, and Malaysia on those aimed at solving problems.

Educational policies and the domestic economic structure in Mexico are particularly disjoint, considering that 93% of the respondents said that are not related; 47% of the respondents in Japan think that both are not related and 40% did not know whether there was a relationship or not; while in Malaysia the figures show a respondents' perception of 40 % believing that both are related, 40% thinking that both are not, and 20% was not certain about the existence of that relationship.

Whether they are related to the current international economic situation, the three countries show high percentages indicate that they are not: Mexico 93%, Japan 67% and Malaysia 53%, which evidence a significant lack of integration of the three economies in the global economic dynamics, and therefore much has yet to be done in this field of action.

While a low degree of integration between employment policies and higher education policies is perceived in Mexico (87%) and Japan (67%), higher education policies and science and technology policies are considered to be highly aligned in Malaysia (73%).

Table 1
Cluster of Higher Education Policies

	Japan	Malaysia	Mexico
Q1 Currently operating	Y 80%	Y 93%	Y 80%
Q2 Disciplines required for development	Engineering and Technology	Engineering and Technology, Management and Marketing	Engineering and Technology
Q3 Quality of graduates	Very satisfactory	Adequate	Unsatisfactory
Q4 Abilities and skills	Analytics	Problem solving	Analytics
Q5 Suitable to country's structure	N 47% Y13% DK 40%	Y 40% N 40% DN 20%	N 93%
Q6 Suitable to international conditions	N 67% DK 33%	N 53% Y 40%	N 93%
Q7 Employment policies	N 67% Y 27%	Y 54% N 33%	N 87%
Q8 Economic policies	N 67% Y13%	Y 60% N 27%	N 60% Y 40%
Q9 Science and technology policies	Y 34% N 33% DK 33%	Y 73% N 14%	Y 46% N 47%

Source: Elaborated by the authors based on information provided by the field research.
Y = yes, N = no, DK = does not know

2. Employment Policies

As the majority of respondents in Mexico (87%), Japan (80%) and Malaysia (73%) are aware of current employment policies, they also perceived that those policies have a very low impact on job creation (Malaysia 79%, Japan 60% and Mexico 60%), which leads to an also very poor impact on private sector productivity (Mexico 80%, Malaysia 79% and Japan 67%).

Within the three economies, Malaysia singles out for having more graduates who right after graduation adjust better to the jobs offered by the private sector (40%), for harmonizing its employment policies with its domestic structure and international position. In the cases of Japan and Mexico, the respondents perceived that government actions on employment are not consistent with the domestic and international conditions, and in Japan the number of respondents who said not to know is relatively significant (40% and

33%).

Regarding employment policy and its integration with education, economic and science and technology policies, there is evidence of desarticulation rather than articulation in Mexico and Japan, and as for Malaysia, the same set of policies and they relationships seem to be more articulated, as can be seen in the last rows of Table 2.

Table 2
Cluster of the Employment Policies

	Japan	Malaysia	Mexico
Q10 Currently operating	Y 80% DK 13%	Y 73% N 20%	Y 87% N 13%
Q11 + Impact on private sector productivity	L 67% H 13%	L 79% H 14%	L 80% N 13% DK 7%
Q12 + Impact on employment opportunities	L 60% H 33%	L 79% H 14%	L 60% H 6% N 27% DK 7%
Q13 Graduates' adjustment to private sector	P 53% M&L 33%	G 40% M&L 60%	G 20% M&L 80%
Q14 Suitable to country's structure	N 47% DK 40%	Y 57% N 43%	N 87% DK 7%
Q15 Suitable to international conditions	N 60% DK 33%	Y 62% N 38%	N 87% DK 7%
Q16 Education policies	N 53% Y 40%	Y 67% N 20%	N 73% Y 27%
Q17 Economic policies	N 53% Y 34%	Y 73% N 20%	N 60% Y 40%
Q18 Science and technology policies	N 46% Y 27% DK 27%	Y 73% N 20%	N 60% Y 40%

Source: Elaborated by the authors based on information provided by the field research.
Y = yes, N = no, DK = does not know

3. Economic Policies

Certainly in this area of public policy, it is observed that in the three study cases (Japan 87%, Malaysia 100% and Mexico 73%), respondents acknowledge the existence of economic policies, but unfortunately their impact on the private sector productivity (Malaysia 67%, Mexico 67% and Japan 53%) and on job creation (Malaysia 73%, Mexico 67% and Japan 60%) is considered to be low, so they represent an area of opportunity for designing effective public policies for three economies.

A high percentage of respondents in Japan are not able to clearly say if economic policy is aligned with domestic and international structures (46% and 43%), while a high percentage of respondents in Mexico (80%) said that are not aligned. More than half of interviewees from Malaysia (60%) perceive that economic policy suits the requirements of the domestic conditions, but also over half of them (53%) think that they are far from meeting the international situation.

Respondents reported that Malaysia shows a significant consistency in the integration of public policy. In Table 3 it can be seen on the last three rows that 67% of respondents believe that economic policy is linked to educational policies; 60%, to employment policies; and 72%, to science and technology policies with employment.

Table 3
Cluster of the Economic Policies

	Japan	Malaysia	Mexico
Q19 Currently operating	Y 87% DK 7%	Y 73% N 14%	Y 100%
Q20 + Impact on private sector productivity	L 53% H 27 %	L 67% H 20%	L 67% H 20%
Q21 + Impact on employment opportunities	L 60% H 20%	L 73% H 20%	L 67% H 20%
Q22 Suitable to country's structure	DK 46% N 27% Y 27%	Y 60% N 40%	N 80% Y 13%
Q23 Suitable to international conditions	DK 43% N 36%	N 53% Y 47%	N 80% Y 13%
Q24 Education policies	N 53% DK 27%	Y 67% N 20%	N 73% Y 27%
Q25 Employment policies	DK 40% N 33%	Y 60% N 20% DK 20 %	Y 71% N 29%
Q26 Science and technology policies	DK 47% N 20% Y 33%	Y 72% N 14% N 80%	N 67% Y 33%

Source: Elaborated by the authors based on information provided by the field research.
Y = yes, N = no, DK = does not know, H = high , L = low

4. Science and Technology Policies

In general it can be said from the information provided by the respondents that they acknowledge the existence of public policies associated with science and technology (Mexico 100%, Japan 87% and Malaysia 73%). However, they think that they do not contribute much to business productivity (Mexico 67%, Malaysia 67% and Japan 53%) and job creation (Malaysia 73%, Mexico 67% and Japan 60%). Mexico is highlighted for its low perception on the relation between science and technology policy and the global trends (87%) (see Table 4).

As for the relationship between science and technology policies and employment policies, less than the half of the respondents in Japan and Malaysia (40%, respectively), and 60% of the respondents in Mexico think that are not harmonized, situation that needs to be explained especially for Japan given its high position in technological sector.

Regarding the relationship with economic policy, more than the half of the respondents in Malaysia (60%) and Japan (60%) think that there is an associaton between these two policies, while respondents in Mexico (67%) have the perception that this relationship is not evident.

Table 4
Cluster of Science and Technology Policies

	Japan	Malaysia	Mexico
Q27 Currently operating	Y 73% DK 20%	Y 80% N 20%	Y 93% N 7%
Q28 Linked with job offers	N 40% DK40%	Y 60% N 27%	N 73% Y 27%
Q29 + Impact on private sector productivity	L 53% H 34%	L 67% H 20%	L 73% H 20%
Q30 + Impact on employment opportunities	L 33% H 20% DK 27% N 20%	L 73% H 20%	L 73% H 7% DK 7% N 13%
Q31 Suitable to country's structure	Y 40% N 27% DK 33%	Y 60% N 27% DK 13%	N 80% Y 13%
Q32 Suitable to human resource supply	DK 47% Y 7% N 46%	Y 47% N 33% DK 20%	N 73% Y 20% DK 7%
Q33 Suitable to international conditions	DK 60% Y 7% N 33%	Y 53% N 27% DK 20%	N 87% Y 6% DK 7%
Q34 Education policies	DK 40% Y 33% N 27%	Y 67% N 13% DK 20%	Y 53% N 40% DK 7%
Q35 Employment policies	N 40% DK 40% Y 20%	Y 47% N 40% DK 13%	N 60% Y 40%
Q36 Science and technology policies	Y 60% N 20% DK 20%	Y 60% N 27% DK13%	N 60% Y 33% DK 7%

Source: Elaborated by the authors based on information provided by the field research.
Y = yes, N = no, DK = does not know, H = high , L = low

V. Final remarks

One of our main objectives of this study was to collect information regarding higher education policies and employment policies from different economic agents in academia, government and private sector, and to contrast that data with official documents, in order to shed light on the actual availability, efficiency, effectiveness and direction of higher education and employment policies, and their impact on the graduate markets.

In this regard it has been observed that the governments of Japan, Malaysia and Mexico, have been driven by their serious concern on a crucial aspect for economic development, such as human resource formation. It can also be stated that despite the implementation of public policies for education, in general, and higher education policies, in particular, which were of varying degrees depending on the country, both educational policies are undoubtedly aimed at supporting the private sector productivity and the creation of jobs opportunities by human capital formation of millions of young graduates from higher education institutions. Nevertheless, according to our findings, there is no evidence of that association. Consequently, there is still a long way to go in the linkage of our concern. The integration of policies of higher education with policies in other areas such as employment, economy and science and technology, remains a pending issue in the three economies, particularly in Japan and Mexico.

In this regard, the comparative method has allowed

us to consider the aspects mentioned above, providing us with elements that can enable improvement in the design of an efficient and effective policy geared to better economic public policy performance in a regional integration context, which evidently shows a trend toward its expansion.

Forthcoming integration processes such as the FTAAP, should not disregard the interface between free market and protectionist measures, which becomes more important considering the membership of Japan, Malaysia and Mexico in APEC and the TPP, where issues as human resources development in institutions of higher education, and employment, are essential for improving the quality of economic growth and therefore the development of their economies.

References

Asociación Nacional de Universidades e Instituciones de Educación Superior - ANUIES (2013) *Educación, Mercado de Trabajo, Satisfacción Laboral*, México.

Cogan, J. John and Kerry J. Kennedy (2004) "Schooling for the Future in Asia Pacific: Six cases," *International Journal of Education Research*, 41 (7-8), 503-511.

Diario Oficial de la Federación (2013) *Programa Sectorial de Educación 2013-2018*, Órgano del Gobierno Constitucional de los Estados Unidos Mexicanos, tomo DCCXXIII, No. 10, México,

Ministry of Higher Education Malaysia (2012) *The National Graduate Employability, Blueprint 2012-2017*, First Print 2012.

Ministry of Education Malaysia (2015) *Executive Summary. Malaysia Education Blueprint 2015-2025*, (Higher education).

Moreno-Brid, J.C. and P. Ruiz-Naples (2009) *La educación superior y el desarrollo económico en América Latina*, CEPAL, Santiago de Chile.

Organization for Economic Cooperation and Development - OECD (2013) *National Development Plans - Opinions of subjects surveyed OECD, Education at a Glance 2013: OECD Indicators*, OECD Publishing.

D.F. viernes 13 de diciembre de 2013.

Gobierno de la República de México (2013a) *Programa Sectorial de Trabajo y Previsión Social 2013-2018*, Plan Nacional de Desarrollo 2013-2018.

Gobierno de la República de México (2013b) *Programa de Desarrollo Innovador 2013-2018*, Plan Nacional de Desarrollo 2013-2018.

Rangel, Ernesto y Antonina Ivanova (2008) *Educación superior y empleo en dos economías de la Cuenca del Pacífico: casos México y Tailandia*, Universidad de Colima y Pacific Circle Consortium, Colima, México.

Rangel, Ernesto and Antonina Ivanova Boncheva (2012) *The Crisis in two Pacific Rim Economies Higher Education and Employment in Mexico and Thailand*, WIT Press Southampton, Boston.

Rangel, Ernesto and Antonina Ivanova (2014) *Higher Education and Employment Policies in Mexico*, Modern Economy, 5 (7), June, Scientific Research Publishing Inc. USA.

Rivas Nava, Fernando and Dora del Refugio Garcianava Requena (2004) "El método del análisis comparativo y su aplicación en los casos de la actividad de México y Nueva Zelanda 2000-2003" *VI Congreso Nacional de Investigación Turística, 22 al 24 de septiembre de 2004*, Ciudad de México.

Sartori, Giovanni and Leonardo Morlino (2002) *El Método Comparativo en las Ciencias Sociales*, Alianza Editorial, Madrid.

Tullao, Tereso S. (2014) "Is Labor Signaling enough to address manpower mismatch?" *APEC Study Centre Consortium Conference 11-12 May, 2014, China 2014/ASCCC/017*, Qingdao, China.

Internet Resources

Mexican House of Representatives (2013) "A commission will be named to oversee the quality of higher education and competitiveness," Bulletin N° . 1453, accessed on January 6, 2014, http://www3.diputados.gob.mx/camara/005_comunicacion/a_boletines/2013_2013/abril_

abril/25_25/1453_se_instala_comision_que_velara_por_la_calidad_en_la_educacion_superior_y_la _competitividad

Ministry of Education, Culture, Sports, Science and Technology of Japan – MEXT (2014) *Heisei 26 nendo Monbukagaku Hakusho, 2020 nen ni muketa bunka seisaku no senryakuteki tenkai orinpikku pararinpikku wo keiki toshita supotsu seisaku to regashi no soshutsu, mirai ni mukao kyoiku saisei no ayumi*, accessed on November, 2015, http://www.mext.go.jp/b_menu/hakusho/html/hpab201501/detail/1361471.html

Ministry of Education, Culture, Sports, Science and Technology of Japan – MEXT (2013) *White Paper on Education, Culture, Sports, Science and Technology*, accessed on July, 2015, http://www.mext.go.jp/b_menu/hakusho/html/hpab201301/1360652.html

Ministry of Education, Culture, Sports, Science and Technology of Japan – MEXT, *Principles Guide Japan's Educational System, accessed on July*, 2015, http://www.mext.go.jp/english/introduction/1303952.html

Ministry of Health, Labor and Welfare – MHLW (2014) *Full Utilization of Human Resource Capability*, accessed on July, 2015, http://www.mhlw.go.jp/english/wp/wp-hw8/index.html

Ministry of Health, Labor and Welfare – MHLW (2013) *For the Realization of a Society of Health and Longevity*, accessed on July, 2015, http://www.mhlw.go.jp/english/wp/wp-hw7/index.html

Ministry of Health, Labor and Welfare – MHLW (2014) *White Paper on Labor Economy*, accessed on July 2015, http://www.mhlw.go.jp/english/wp/l-economy/2014/index.html

Ministry of Health, Labor and Welfare – MHLW (2013) *White Paper on Labor Economy*, accessed on July 2015, http://www.mhlw.go.jp/english/wp/l-economy/2013/index.html

Appendix

Questionnaire

Cluster and questions.

1) Subject Information, 1) Organization name, 2) Job title, 3) Name of the interviewee, 4) Branch of economic activity, 5) Telephone, 6) Address, 7) E-mail or WEB page.

2) Assessment of Higher Education Policies. Q1) Do you think higher educational policies are currently operating?; Q2) In your opinion, in what kind of areas should the effort of the universities be focused for the country's development (rate from 1 to 4, where, 1 = most important and 4 = least important): engineering and technology, management and marketing, mathematics and science, law and humanities; Q3) In relation to the quality and supply of graduate professionals from higher educational institutes, do you consider that the current job offer is: very satisfactory, adequate or unsatisfactory; Q4) What abilities and aptitudes do you consider students should develop in order to perform productively labor activities on the current job positions and that you think, have not had the adequate promotion by the higher educational institutions (grade from 1 to 8 where, 1 = most important and 8 = least important): analytical, manuals, decision making, solving problems, using technology, team work, languages and communication, statistics; Q5) Do you think that educational policies are adequate for the economic structure?; Q6) Do you think that educational policies are adequate to the present international economic situation?; Q7) Do you think that educational policies are linked with employment policies?; Q8) Do you think that educational policies are linked with the economic policies?; Q9) Do you think that educational policies are linked with science and technology policies? Any additional comment.

3) Assessment of Employment Policies. Q10) Do you think employment policies are currently operating?; Q11) How do current employment policies contribute to increase enterprises' productivity?: a lot, a little, nothing, indifferent, don't know; Q12) How do current employment policies contribute to increase employment opportunities?: a lot, a little, nothing,

indifferent, don't know; Q13) To what degree do you consider the knowledge and abilities of newly-employed graduates is adequate to their immediate private sector integration?: excellent, good, more or less, poor; Q14) Do you think employment policies are adequate for the country's economic structure?; Q15) Do you think employment policies are adequate for the present international economic situation?; Q16) Do you think employment policies are linked with education policies?; Q17) Do you think employment policies are linked with economic policies?; Q18) Do you think employment policies are linked with science and technology policies? Any additional comment.

4) Assessment of Economic Policies. Q19) Do you think there are economic policies currently in operation?; Q20) How do currently economic policies contribute to increase the productivity of enterprises?: a lot a little, nothing, indifferent, don't know; Q21) How do currently economic policies contribute to increase the employment opportunities?: a lot, a little, nothing, indifferent, don't know; Q22) Do you think economic policies are adequate for the country's economic structure?; Q23) Do you think economic policies are adequate for the present international economic situation?; Q24) Do you think economic policies are linked with education policies?; Q25) Do you think economic policies are linked with employment policies?; Q26) Do you think economic policies are linked with science and technology policies? Any additional comment.

5) Assessment of Science and Technology Policies. Q27) Do you think there are science and technology policies currently operating?; Q28) Do you think there are science and technology policies linked with the job offers currently operating?; Q29) How does currently science and technology policy contributes to increase the productivity of enterprises?: a lot, a little, nothing, indifferent, don't know; Q30) How does currently science and technology policy contributes to increase the employment opportunities?: a lot, a little, nothing, indifferent, don't know; Q31) Do you think science and technology policies are adequate for the country's economic structure?; Q32) Do you think science and technology policies are adequate to human resources supply?; Q33) Do you think science and technology policies are adequate to the present international economic situation?; Q34) Do you think science and technology policies are linked with education policies?; Q35) Do you think science and technology policies are linked with employment policies?; Q36) Do you think science and technology policies are linked with economic policies?; Q37) We will appreciate if you write any comments or suggestions that will help the accomplishment of this questionnaire objective.

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日本、マレーシア及びメキシコにおける卒業生の雇用状況、高等教育及び雇用政策

ランヘル・エルネスト　スエヨシ・アナ　サンスディン・ロース・シャンシア

概要

本研究ノートの目的は、アジア太平洋の３カ国における高等教育政策及び雇用政策に関する検討で、特に雇用に対する高等教育政策の影響を明確にすることである。政策については、経済政策・研究開発政策との関係も検討する。そのため、関連する３つの領域 (行政、企業、教育機関) で調査を実施した。調査結果によると、どの３カ国でも高等教育政策、雇用政策、経済政策、研究開発政策が実施されているが、各機関相互の関連性が希薄である。前述の４つの政策の関連性を持たせることが政府の取り組むべき課題であり、特に日本とメキシコにおいて顕著である。

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