

Challenges of Highly Educated Human Resources in Guatemala

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ABSTRACT

This article attempts to provide a critical valuation of the availability, formation and best use of national highly educated human resources (HEHHRR) in Guatemala. HEHHRR, for the purpose of this article, is understood in terms of educational attainment and skills development among the population; ultimately framed in higher education. Focus has been placed on individuals graduated from fourth-level academic programs (master, doctoral degrees). The authors start by providing an overview of the country context; subsequent sections reflect on the development profile of Guatemala and the challenges faced by its domestic higher education system which hinder its ability to comply with its role in the production of the needed HEHHRR for the development of the nation. Findings provide evidence of the scarcity of HEHHRR in Guatemala as well as the existence of conditions that make it unlikely to produce them domestically. In addition, different elements of the work scenario limit the best use of the Guatemalan HEHHRR. Therefore, this study strives to provide a better insight into the HEHHRR of Guatemala, the importance of international cooperation to address shortcomings at the domestic level, and suggests various topics for future research.

Key Words: higher education, human resource management, human capacity development, development cooperation, postgraduate education in Guatemala, highly educated human resources in Guatemala, higher education in Guatemala

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INTRODUCTION

Guatemala displays some of the lowest indicators of human resources formation in the Latin American region – a geographic area of the planet itself lagging behind other emerging regions such as the Northeast, Southeast and Central Asia. Producing master and doctoral level educated Guatemalans in the domestic higher education system has proven to be both inefficient and insufficient. Research and academic-oriented activities seem not to be considered priority in the social debates of this Central American country (Hernandez and Blass 2013). Lack of public policies related to HEHRR management, an unstructured and poorly governed tertiary education system, disengagement between private, public and academic sectors, as well as the prevalence of short-term planning and vision are factors that partly explain the tremendous adversities to be overcome in this field.

Assuming that the higher education system of Guatemala is in charge of forming the next generations of business people, political leaders, professional workers and the critical work force who will lead the path toward the development of the country, it is crucial to address several challenges already acknowledged by experts (Aldana 2014; Rodriguez 2014; Arenas 2012), academicians (Sacayon 2012; Tobar 2011; Godinez and Tobar 2005), government officers and political leaders (Parrilla 2013; Rubio 2013; Fuentes 2013) and higher education authorities (Medina 2014; Cabarrus 2013; Ponce 2007; Galvez 2006).

For years, different sectors of the Guatemalan society have witnessed the decadence of higher education. Journalists have repeatedly called the attention of the country to these issues (Gonzalez 2013; Leon 2013; Iteriano 2012; Hurtado 2011). This is consistent with the poor indicators that Guatemala constantly registers in different reports related to the formation of human resources in domestic universities. Among the problems to be addressed some outstanding elements are: weak governance and outdated legal framework, insufficient coverage, inequality, low quality of education, involvement of politics in the academic sector, and inefficiency among others.

A highly educated and skillful workforce is vital to achieve broader developmental goals. That is why this study intends to respond to three puzzling questions: 1. What is the availability of highly educated human resources in Guatemala? 2. To what extent is the domestic higher education system of Guatemala able to produce highly educated human resources? and 3. What is the sector of the work context that makes the best use

of the HEHHRR in Guatemala? The objective of this article is to examine the current status of higher education and the formation of HEHHRR in Guatemala, which has not been able to fulfill its responsibility. The daunting situation of the higher education system in Guatemala along with the aim to develop human capacity motivated some members of the donor community to cooperate with Guatemala since 1980s; recently, more developed nations have joined the effort. This article assesses the challenges faced by Guatemala in strengthening its human resources talent as a platform to materialize the newly rising knowledge-economy paradigm.

The methodology applied in this study followed a qualitative approach, with an emphasis on the participants' experiences. The prevalent stance is an interpretive analysis based on the elucidation of reality on the views of the stakeholders. Apart from desk review of available secondary sources, first-hand data was collected through in-depth interview and an online survey.

In-depth Interview

Two field investigations took place in Guatemala, from December, 2012 to February, 2013, and from 1 to 14 February, 2014, respectively, which allowed first-hand data collection. Table 1 contains the details of the interviewees who were invited to contribute to the study by sharing their experience working in the public sector, academia, institutions or organizations related to the policies, regulatory framework, and provision of higher education of Guatemala.

The interviews took place on face-to-face bases, with an average duration of 75 minutes. The open-ended questions included consultations on diagnosis of the higher education system in Guatemala and its performance in the formation of HEHHRR for the development of the country¹.

1 For a copy of the questionnaires contact the authors.

Table 1. List of Interviewees - Key Stakeholders Higher Education System

Organization	Name	Position	Date of Interview
University of San Carlos of Guatemala (USAC)	Maria del Rosario Godinez	Head of the Postgraduate Studies System	2013.02.04
University of San Carlos of Guatemala (USAC)	Cesar Morataya	Coordinator of the Department for Scholarships and Training Sponsorships	2013.02.06
University of San Carlos of Guatemala (USAC)	Maria Teresa Molina Santos	Coordinator of Agreements and Negotiation, department of International Cooperation	2013.02.06
University of San Carlos of Guatemala (USAC)	Nohemi Luz Navas	Head of the Department of Professional Evaluation and Promotion for Professors	2013.02.08
University of San Carlos of Guatemala (USAC)	Efrain Medina	Former Rector of USAC	2014.14.11
University of San Carlos of Guatemala (USAC)	Mario Rodriguez	Head of Research in Education – Institute for National Problems	2014.02.13
University of San Carlos of Guatemala (USAC)	Jose Gramajo	Director of Academic Evaluation	2014.02.13
Superior Council for Central America Superior Education (CSUCA)	Francisco Alarcon Alba	Deputy Secretary General	2013.02.26
Rafael Landivar University (URL)	Carlos Rafael Cabarrus	Vice-Chancellor for Research	2013.02.16
Ministry of Education	Carlos Aldana	Former Vice-Minister	2014.02.13
Institute for the Development of Superior Education in Guatemala (INDESGUA)	Luis Edgar Arenas	Executive Director	2013.01.05
National Secretariat for Science and Technology (SENACYT)	Miriam Patricia Rubio	Head of National Secretariat for Science and Technology (SENACYT)	2013.10.22

Note n=12

Survey

Subscribers of the Institute for the Development of Higher education in Guatemala (INDESGUA) were invited to fill-out an on-line survey titled: “Best Use of Guatemalan Highly-Educated Human Resources (masters and Ph.D. graduates) for the Development of the Country”. From the over 10,000 subscribers of INDESGUA, nearly 1,000 are preparing or have presented applications to study postgraduate education. The period of the survey ranged from 22-28 February, 2014. In total 518 respondents completed it.

The survey included four questions related to three main themes: 1. Availability of highly educated Guatemalan human resources, 2. Sector of employment that best uses the highly educated Guatemalan human resources for the development of the country, and 3. Rating the priority level of eight academic/knowledge fields. Questions 1, 2 and 3 were presented in multiple choice format and question 4 asked respondents to assign the level of priority to each of the academic/knowledge field between 1 maximum priority and 8 least priority.

REVIEW OF LITERATURE

Development Profile of Guatemala

Guatemala is located in Central America, borders Mexico to the north and west, the Pacific Ocean to the southwest, Belize and the Caribbean Sea to the northeast, and Honduras and El Salvador to the southeast. The country has a territorial extension of 108,890k2, of which 98.4% is soil and the remaining 1.6% is water. The tendency of the land inclines 39.4% to agricultural use and 34.1% to the forest use (BCIE 2010). The territory is divided into 22 provinces known as departments and 333 municipalities. The predominant religious belief is Christianity divided between catholic (60%), protestant (30%) and minority (10%) faiths. The World Bank (2013) classifies economies according to their income. There are low income countries with a GNI per capita of \$1,025 or less; lower middle income, \$1,026-\$4,035; upper middle income, \$4,036-\$12,475; and high income, \$12,476. Guatemala is considered in the lower middle income category, with an income calculated for 2012 of \$4,700.

As for the social context, Guatemala presents some of the worst indicators in education and health in Central America (a region with the lower

indicators in Latin America and the Caribbean). The illiteracy rate is the highest with 25.2% of the population over 15 years of age. Schooling is also an evidence of the backwardness of education in the country, with primary education still not achieving 100% coverage, falling short with 95.1%; the net enrolment in secondary education is merely 39.9%. A high drop-out rate in high school leaves secondary education enrolment at only 17.7%.

Table 2. Guatemala, Key Socioeconomic Indicators

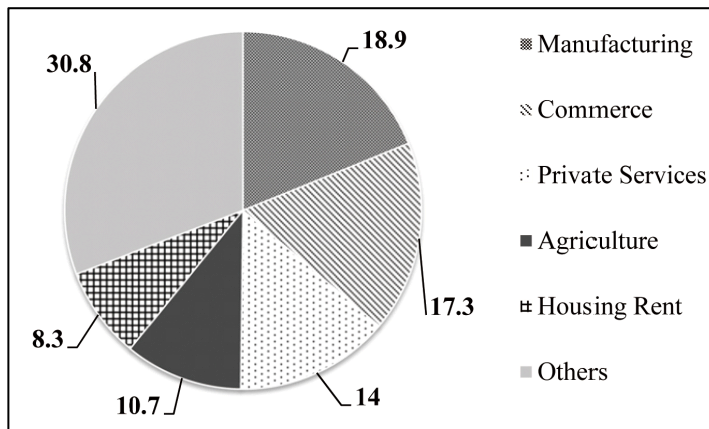
Socioeconomic Indicators	2000	2001	2002	2003	2004	2005	2006	2010*	2012*
GDP growth (annual %)	3.6	2.3	2.2	2.1	2.7	3.2	4.5	3.8	3.1
GNI per capita, PPP (current international \$)	4.310	4.440	4.460	4.540	4.680	4.860	5.120	4.620	4.760
Inflation, GDP deflator (annual %)	6.8	7.6	8.0	6.3	7.0	7.8	6.3	5.1	5.5
Military spending (% of GDP)	0.8	0.9	0.7	0.7	0.4	0.3	0.4	0.4	0.4
Life expectancy from birth, total (years)	67.9	-	68.9	-	-	69.7	69.9	74	75
Population in millions	11.2	11.5	11.8	12.1	12.4	12.7	13.0	14.7	-
Population growth (annual %)	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.02	1.95
Total fertility rate (births per woman)	4.8	-	4.6	-	-	4.3	4.2	4.0	3.9
HIV prevalence (% of the population between 15-49)	-	-	-	0.9	-	0.9	-	0.7	0.8
Primary school completion rate (% of the group in relevant state)	55.7	60.3	64.1	65.2	69.8	73.7	76.5	84	86
Rate of girls in relation to boys in primary and Secondary education (%)	88.9	89.6	90.7	90.6	91.1	91.6	92.3	95	-
Worker remittances and employee compensations received (% GDP)	3.1	3.0	6.9	8.6	9.5	9.6	10.3	10.23	9.6

Source: World Bank (2008), * 2013

Guatemala's Human Development Index value for 2012 was 0.581—in the medium human development category—positioning the country at 133 out of 187 countries and territories. Between 1980 and 2012, Guatemala's HDI value increased from 0.432 to 0.581, an increase of

34 percent or average annual increase of about 0.9% (UNDP 2013). For a general perspective of the socioeconomic indicators of the country, table 2 includes relevant information for the last decade. Some indicators have registered steady improvement such as life expectancy at birth, primary education completion rate and microeconomic stability. Conversely, inequality is among the highest in the world; in Guatemala the poorest decile of the population receives only 1.0% of the national income while the richest decile receives 47.4%.

Guatemala's economy continues to be structured on the agro-export model of development placing high dependence of agricultural products and low value added traditional exports. Since its independence, the agro-export economic model produces an economic structure that offers few incentives to innovation, relying on imported technology rather than the development of a homegrown one. For an extended period of time the biggest share of the economy was typically agriculture. Guatemala is the biggest exporter of cardamom, fifth exporter of sugar and seventh exporter of coffee worldwide. Agriculture was followed by tourism, thereby becoming the second source of foreign currency after remittances.



Source: FUNDESA, 2012

Figure 1. Guatemala, Economic Activity (%)

Nearly 1,637,119 Guatemalan economic immigrants have mostly moved to the United States (97.4%) looking for job opportunities, which represents 11% of Guatemala's population (UNICEF 2010). Five branches explain 70% of the total production of the country (FUNDESA 2012). Figure 1 reflects an economy in which human capital and innovation plays a

limited role. Compared to other economies in the region that are promoting and upgrading their productive matrix towards knowledge and services and high added value such as Chile, Ecuador and Colombia, the case of Guatemala remains underdeveloped. The GDP of Guatemala is dominated by the private sector that generates 85%. Agriculture still accounts for 75% of the exports.

In terms of competitiveness Guatemala faces significant challenges when it comes to innovation, institutional strength, higher education, skill-development and training. Some indicators produced to assess aspects of competitiveness consider an economy as efficiency driven “when it must begin to develop more efficient production processes and increase product quality because wages have risen and they cannot increase prices” which is the case of Guatemala (World Economic Forum 2012). At this point, competitiveness is increasingly driven by higher education and training, efficient goods markets, well-functioning labor structures, and the ability to harness the benefits of existing technologies. This is not happening for Guatemala. In the bottom half of the ranking, at 83rd place, Guatemala went up by one place in 2010. According to the WEF (2012), one of the most problematic factors for doing business in Guatemala is inadequately educated labor force. This aspect affects negatively the conditions offered by the country to do business.

[...] the country boasts some relative competitiveness strengths in terms of flexible labor regulations for hiring and firing staff (54th) and wage determination (43rd), efficient financial market development (41st), and the intensity of local competition (46th). However, its competitiveness is hampered by a weak public institutional set-up (130th) and hindered by the very high costs of crime and violence (144th) and low trust of the business community in politicians (122nd). **Guatemala’s very low level of innovation capacity is the result of a low-quality educational system (130th), scarce use of ICT (99th), and low R&D-related innovation investments (90th).** The weak quality of its transport infrastructure (93rd) also negatively affects its national competitiveness (p. 34, Highlight added).

Every year 140,000 young Guatemalans enter the labor market, among them only 25,000 access to formal employment, with training and social security. For last 10 years, only 200,000 new jobs have been created, which confirms the prevalence of informal employment jumping from 2.9 million in 1989 to 5.1 million of inhabitants in 2011.

Challenges of Higher Education in Guatemala

Few academic sources were found addressing the issue of HEHRR in Guatemala. Most written articles are journalistic pieces (Medina 2014; Gonzalez 2013; Arenas 2012; Sacayon 2012; Hurtado 2011). A general emphasis in teaching rather than research activities in the Guatemalan universities have also limited serious attempts to systematically study the outcomes of the higher education in Guatemala (Aldana 2014; Hernandez and Blas 2013; Tobar 2011).

Godinez and Tobar (2005) provide a general diagnosis of the postgraduate education system for the public higher education in Guatemala. This is particularly meaningful as in Guatemala there is only one public university which enrolls 42% of the total population of university students, while the remaining 14 private universities cover 58% (Tobar 2011). The study concludes that both San Carlos of Guatemala University and the private universities in the country provide insufficient postgraduate academic programs which at the same time are overly concentrated in social sciences (20). These programs, according to the authors, are not only insufficient but also inefficient. The relation between enrolment and graduation observed during the period of the study (1992-2004) had a sustained index of 0.1306 which means that from every 100 graduate students enrolled in San Carlos of Guatemala University only 13 successfully completed their programs, obtaining the respective specialization, master or doctoral degree. Godinez and Tobar (2005) also acknowledge the challenges that graduate from advanced superior academic programs face when seeking employment in Guatemala. According to their study the stage of development in the economic, productive and industrial structures in the country provides few employment opportunities. This situation presents the dilemma of the “chicken and the egg” when deciding what comes first: a sizeable pool of HEHRR that will attract productive investment which at the same time will employ them, or the industry has to evolve first in order to create the incentives for Guatemalans to engage in postgraduate education.

Calderon (2005) addresses the problems of course repetition and dropping out in higher education of Guatemala. Both in private and public universities the phenomena is critical in terms of ineffectiveness and inefficiency of tertiary education as undergraduate students do not complete their degrees at some point or ever do so. At postgraduate level the issue of incompleteness is more critical. Calderon concludes that the findings were “discouraging for the higher education of Guatemala as 96.5% of the population lacks tertiary education degrees and those who are enrolled have to overcome

different obstacles in order to complete their programs (2005, 18). Over 75% of the university students in Guatemala are affected by dropping out”. Not only access to higher education is an issue but also is the successful completion of the programs.

International and regional education organizations (UNESCO 2012; Moreno and Ruiz 2009; UNESCO/IESALC 2006) have also highlighted that higher education reform is urgently needed in Latin America, Central America and Guatemala. Particularly, the case of Guatemala is pointed as one of the countries falling behind.

Nevertheless, the situation of higher education in Guatemala cannot even be properly analyzed due to the lack of information and systematic registries (Brunner 2009). The public institutions which would be expected to produce such data as the National Secretariat for Planning and Programing of the Presidency (SEGEPLAN), the National Secretariat for Science and Technology (SENACYT), the Council for Private Higher Education (CEPS) and USAC fail to generate reliable information.

When information exists, indicators usually present how the higher education system in Guatemala suffers from low coverage, inequality, exclusion and a marked disengagement between academia and the society (Knut 2009; UNESCO/IESALC 2006; Rama 2006).

Tobar (2011) presents a comprehensive study titled *The Higher education in Guatemala during the First Decade of the XXI Century*. His data and analysis conclude that the entire higher education system in Guatemala is in trouble. Especially, the supply of tertiary education is provided by an insufficient number of universities disengaged from one another with no proper evaluation or quality assurance. Tobar acknowledges that admittedly the number of universities authorized to operate in Guatemala has recently grown. However “the data of coverage is not hopeful as the indicators are way lower than the average of Latin America” (2011, 73). The higher education has yet to fulfil its role to become the “engine to solve the great national challenges [for the development of Guatemala] as since its creation up today its impact is negligible” (Tobar 2011, 73). The tertiary education in Guatemala is still responding to last century with no incorporation of new technology and best practices. The limited amount of public investment in higher education, significant disequilibrium between urban and rural regions and their access to higher education, inequality and poor governance in higher education hinders the contribution of university formation among Guatemalans. Furthermore the production of HEHRR for the development of the country is compromised.

Sacayon (2012) also depicts the challenges faced by the higher education

in Guatemala which “suffers from deficits in access to higher education, biased and selective academic offer is bent to perpetuate the current economic model of the country”. This economic model does not respond to the demands of modern knowledge economy but an agro-export model with little added value to the Guatemalan production. Considering the population between 15 and 29 years old, only 6% have access to higher education. From every 100 Guatemalans only 12 reach at least one year of higher education. This is aggravated when considering the population desegregated by ethnicity, urban-rural, gender and academic fields. According to Sacayon (2012, 13) the “absence of information, reliable registries in the universities, inexistence of a public institution coordinating and evaluating higher education provision in Guatemala are among the urgent issues to be addressed”. This urgent matter regards mainly access and coverage without even considering the quality of higher education, level of the formation of university professors and efficiency of the system.

Indeed, different sources agree that one of the key deficiencies in Guatemala which hinders the best use of HEHHRR is the lack of information and systematic registry. This is evident in the absence of statistics, diagnosis and mapping, yet it is particularly alarming in higher education, training and several other spheres of social services (Sacayon 2012; Tobar 2011; Godinez and Tobar 2006). In the regional or world-wide assessments of superior education, Guatemalan data appears to be empty or with partial information (Brunner 2011; UNESCO 2012; UNESCO/IESALC 2002; Schwartzman 2002).

FINDINGS AND DISCUSSIONS

The result of desk review, interviews and on-line survey can be presented in the following supply and demand perspectives in context of the Guatemalan HEHHRR:

HR Supply Perspective: Role of the Domestic Higher Education System in the Formation of HEHHRR

With regard to the supply of HEHHRR, Guatemalan education system has not been able to produce capable and sizeable human resources for development. Table 3 and 4 depicts the list of universities and the enrollment in tertiary education in Guatemala. Admittedly, the coverage has steadily

grown. However, the coverage of tertiary education in Guatemala evidences backwardness in the formation of human capital in the country. In 2012 there were 312,697 university students registered in the country, a reduced percentage of the population eligible in the age bracket between 18-23 years old. It is calculated that the raw coverage of higher education in Guatemala is 12%: this would mean 12 of every 100 Guatemalan aged between 19-24 years old is enrolled. This is one of the lowest in Latin America.

Table 3. Higher Education Institutions in Guatemala

University	Date of Foundation
San Carlos de Guatemala (Public)	1676/01/31
Rafael Landivar	1961/10/18
Del Valle de Guatemala	1966/01/29
Mariano Galvez	1966/06/01
Francisco Marroquin	1971/08/12
Rural de Guatemala	1995/03/28
Del Istmo	1997/09/19
Panamericana	1998/02/10
Mesoamericana	1999/10/01
Galileo	2000/10/31
San Pablo de Guatemala	2006/06/27
Inter Naciones	2009/08/06
De Occidente	2011/01/01
Da Vinci	2012/11/13

Source: Council for Private Superior Education, <http://www.ceps.edu.gt/ceps>

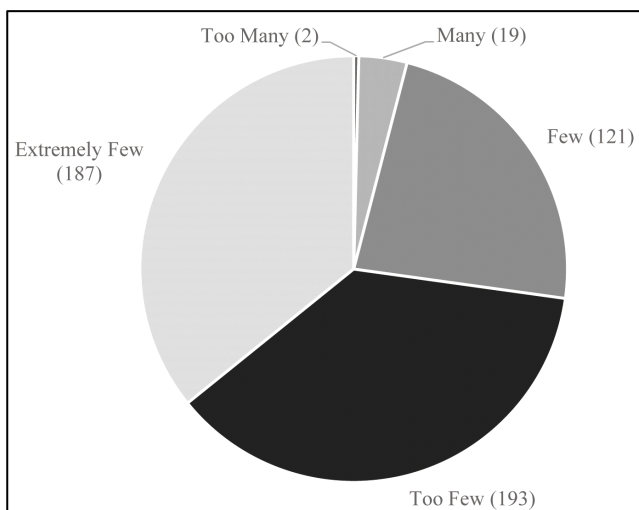
Table 4. Enrolment in Tertiary Education, Guatemala 2006-2010

Year	Total	Public*	Private	%		Total	Growth Rate	
				Public	Private		Public	Private
2005	255,307	112,968	142,339	44.25	55.75	8.06	-0.49	15.96
2006	273,727	112,257	161,470	41.01	58.99	7.21	-0.63	13.44
2007	292,458	117,350	175,108	40.13	59.87	6.84	4.54	8.45
2008	311,033	126,969	184,064	40.82	59.18	6.35	8.20	5.11
2009	329,965	134,196	195,499	40.70	59.30	6.00	5.69	6.21
2010	349,477	146,741	202,736	41.99	58.01	6.00	9.35	3.70

Source: Tobar (2011).

Steier and Yammal (2001) also stress the overwhelming concentration of the superior education enrolment of Central America and Dominican Republic in undergraduate and non-degree technical programs. As for postgraduate education the coverage is extremely low (11). Few specializations and master programs are available with only a handful of doctoral programs offered. Godinez and Tobar (2006) also acknowledge that not only postgraduate programs are scarce but are overly concentrated in social sciences, humanities and law fields.

There is an acute shortage of HEHHRR in Guatemala, which was confirmed by the survey results. Figure 2 below shows that only 4% of the respondents consider that there are 'too many' or 'many' highly educated HEHHRR in Guatemala. 23% consider that there are few highly educated HEHHRR in Guatemala. A convincing 37% and 36% respectively consider that there are 'too few' or 'extremely few' HEHHRR in Guatemala.



Note n= 522

Figure 2. Availability of HEHHRR in Guatemala

Then, what are the causes for this serious lack of the supply of HEHHRR in Guatemala? The paper suggests three reasons: Lack of legal and institutional framework, Monopolized by a Public University, and Overconcentration in Social Science.

Lack of legal and institutional framework

Higher education in Guatemala is a pending issue that needs urgent attention from the authorities. Challenges in different areas such as coverage and access, academic offer, quality of education, consistency of university education with the needs of the society have been pointed out by academics, policy makers, journalists and specialists (Hurtado 2011; Piril 2011; Moreno-Brid and Ruiz-Napoles 2009; Lopez 2004).

Guatemala is one of the few countries in Latin America without the general law of higher education unlike other neighboring nations. Therefore, it is difficult to expect the proper regulatory function regarding structure, institutions, quality control and coverage increment. Neither the Ministry of Education nor any public agency is mandated to be in charge of the superior education. In Guatemala, the Ministry of Education only regulates and administers pre-elementary, elementary and secondary education.

The only legal function in Guatemalan higher education can be seen in 1985 Constitution with regard to the appointment of the national University and the creation of some institutions such as the Council for Private Superior Education (CEPS) in charge of evaluating the initiatives to create new private universities and 11 Professional Associations (*Colegios Profesionales*). However, they mostly function independently with no real coordination or external means of control and supervision.

Steier and Yammal (2001) sustain that “the legal framework of the Guatemalan superior education system is outdated and strongly affected by historical events, particularly the 36-year-long internal conflict”. This is consistent with Chamarbawala (2010) whose study surveys the negative impacts of the civil war over human capital formation institutions, professional workers and academics.

Monopolized by a Public University

Well educated Guatemalans have been traditionally considered as the elite. During the colonial era between 1523 and 1821 only the direct descendants of Spanish conquerors had an access to the superior education. Later, since Guatemala gained independence, a systemic exclusion of women, indigenous and the poor prevailed until after 1944 revolution, when higher education became more accessible to the less privileged. Even today, Guatemala reflects in the education of its people the inequality that prevails in its social and economic structure.

As hinted before, the 1985 Constitution of the Republic assigned the only one public university (USAC) to create and develop public policies

in higher education². It means that the provision of higher education is greatly concentrated in the public sector. By 2012 (see table 4) at least 14 universities were legally registered and authorized to function in the country, one public and thirteen private. Only the public university, USAC is highly subsidized by the government with a constitutional allocation of 5% of the general public revenues annually. However, it has been largely criticized that the lack of accountability in the use of public resources by USAC and inexistence of controls of quality and standards hinder long term planning, effectiveness and efficiency.

Gutierrez and de la Rosa (2004) estimate that a mere 10% of the full-time professors in USAC holds postgraduate degrees (in El Salvador the percentage is 27%) while doctoral degree holders are scarce. Only 9.2% of the faculty are full-time professors while the remaining 90.2% are either part time or temporal contract professors. It is estimated that over 75% of the university professors work by hours. This contrasts with the neighboring Costa Rica with 67% of full-time faculty.

Different sources have pointed out that USAC has neglected its critical role as the heart of academia in Guatemala to become a political actor (Rodríguez 2013; Hurtado 2011; Torres 2008). Over the years different voices have stressed the deterioration of academic quality of USAC which has been replaced by politics. This emblematic institution has been infiltrated by political parties, interest groups and poor government practices (Castillo 2014; Maul 2010). USAC has been seen as “political loot” (Castillo 2014) “remains of academics” (Fernandez 2010) and a “mediocre institution” (Maul 2010). For instance, there are a number of electoral events in USAC from student bodies, to Deanships and the top position of Rector that are practically identical to those activities performed by political parties. In this electoral vortex time, resources which are supposed to be devoted to academy, research and core educational activities are wasted. Therefore, one of the most serious problems negatively affecting the maximum use of HEHHR in Guatemala is the pervasive interference of politics in the academic sector.

Overconcentration in Social Science

A pervasive emphasis in the exclusive teaching activities as educational purpose perpetuates the reproduction of knowledge instead of production of new knowledge; research, science and technology are fields not yet

2 Founded in 1676, January 31st. USAC is one of the oldest superior education institutions in Latin America.

explored or prioritize in the institutions of higher education (Hernandez and Blas 2013). In comparison to other Latin American countries, academic research and scientific production produced in Guatemala is scarce. Not only superior education is weak in coverage and accessibility to the majority of population in Guatemala, but also it is highly concentrated in social sciences. Tables 5 and 6 summarize the number of graduates from the national superior education system from master and doctoral degrees.

Table 5. Masters Degree Awardees from Local Institutions in Guatemala (2001-2011)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Field
1	4	2	15	1			21	21	4	7	Natural and Exact Science
32	35	44	41	38	64	185	150	200	118	275	Engineering and Technology
181	188	234	200	54	52	142	75	307	415	407	Medical Science
			2	15	47	86	93	40	26	10	Agricultural Science
141	141	292	322	535	799	822	827	942	1572	1334	Social Science
31	23	26	32	54	12	22	30	100	77	60	Humanities
386	391	598	612	697	974	1257	1196	1610	2212	2093	Total

Source: RYCIT (2013), <http://www.ricyt.org/>

Table 6. Graduated from Doctoral Degree from Local Institutions in Guatemala (2001-2011)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Field
											Natural and Exact Sciences
				2							Engineering and Technology
					2	1	2				Medical Sciences
											Agricultural Sciences
3		3	6	9	16	8	5	25	16	37	Social Sciences
	1					1	3				Humanities
											Not Assigned
3	1	3	6	11	18	10	10	25	16	37	Total

Source: RYCIT (2013), <http://www.ricyt.org/>

As can be seen above, masters degree awardees are concentrated in the social science field with an average of 60% in 2001-2011 period, followed by Medical Sciences, and Engineering and Technology. The case

of doctoral degree is even more serious with low number of graduates and very high level of concentration (91%) in social sciences.

This lack of diversification of academic fields observed in the domestic superior education system of Guatemala is worrisome as innovation and industrial conditions are more likely to occur with a robust critical workforce in science, engineering, and technical fields.

In a country with abundant needs it might appear that all the academic and professional fields are in top priority in order to lead Guatemala into the path of development. An on-line survey was solicited from the respondents to assign a level of priority to eight academic fields ranging from 1 for the highest priority and 8 for the lesser priority.

Based on the responses, Medical and Health Science is considered top priority for the development of Guatemala, followed by Education, Humanities and Behavioral Sciences and Engineering and Technology. These findings may be helpful to allocate scarce resources to educated Guatemalans, particularly as the fields of academic/professional training should respond to the needs of the country.

Generally, priorities of the respondents are given to the engineering and technology field. This is consistent with the emphasis economic development is placing on innovation and entrepreneurship. If countries with the economic and social development of Guatemala, aim to compete in the century of the knowledge-based growth, further stress should be directed toward these disciplines (Table 7).

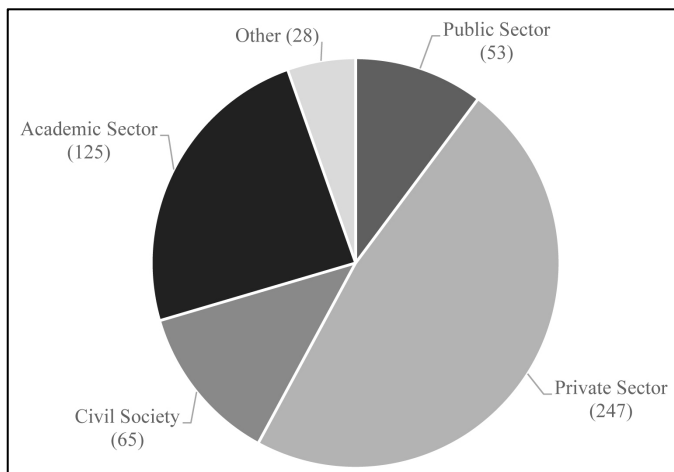
Table 7. Priority Academic/professional Fields for the Development of Guatemala

Academic Field/Level of Priority	1st	2nd	3rd	4th	5th	6th	7th	8th
Social Sciences	144	87	63	44	39	45	49	45
Education, Humanities and Behavior Sciences	214	76	50	29	30	39	30	48
Administration, Business, Economics and Finances	103	108	95	53	54	31	30	42
Natural and Exact Sciences	113	95	85	63	37	43	30	50
Biotechnology, Agro sciences and Environment	163	100	76	35	34	32	31	45
Engineering and Technology	193	82	61	37	31	28	41	43
Medical and Health Sciences	233	93	46	30	20	20	25	49
Public Administration and International Relations	110	83	80	57	49	41	42	49

HR Demand Perspective: Best Use of Highly Educated Guatemalan Human Resources for the Development of Guatemala

While the facilitation of HEHHRR in Guatemala is limited, the sector of employment that makes the best use of those highly educated Guatemalans was also a main concern element of the present study. Respondents of the on-line survey were asked the following question: *In your opinion which sector of the Guatemalan work context makes the maximum use of the highly educated Guatemalan human resources?*

Figure 3 summarizes the responses. According to the data collected, 48% of the respondents consider that the private sector, understood as business oriented/profit seeking organizations, is the area of the work context in Guatemala that best uses the HEHHRR. The next pointed sector was the academia with 24% and the civil society or NGOs with 13%. Last, in the opinion of the respondents, was the public sector with 10% and others with 5%.



Note: n= 518

Figure 3. Sector of the work context of Guatemala that best uses Guatemalan HEHHRR for the Development of the Country

Qualitative insights regarding the positioning of the highly educated Guatemalan human resources were sorted and classified in two main themes of *Conditions for best use and Challenges to the best use* (Tables 8 and 9).

The skills acquired in overseas postgraduate education including advanced research, innovation, and international networking, could be better applied while teaching or producing new knowledge. This has proven to be a pressing issue in Guatemala as the higher education system has not been capable of producing the sufficient critical and talented work force. Although the private sector tends to increasingly value HEHHRR in Guatemala, the academia can maximize the gains for the development of Guatemala, in terms of the benefits and social return.

Table 8. Best use of the Guatemalan HEHHRR for the Development of the Country

Sector of Employment	Why the particular sector is suitable for the best use of HEHHRR in Guatemala
Public Sector	<ul style="list-style-type: none"> - Stable positions allow returned graduates to share new knowledge in their institutions - Public institutions serve the masses, therefore the impact of the well-educated Guatemalans is higher
Private Sector	<ul style="list-style-type: none"> - Merits are base for recruitment and procurement is more efficient - Has more available resources for projects and programs - Values more education and stimulates innovation
Academic Sector	<ul style="list-style-type: none"> - It is more likely to keep scholarly development - Research skills are valued - Impact of the knowledge transfer is higher in teaching than in administrative or profit seeking position. Good quality education is deeply needed in the country - University is a stable employer
Civil Society	<ul style="list-style-type: none"> - Possibility to give back to Guatemala - Provides the services that both private and public sectors are not fulfilling: one does not allow development of a career while the other is focused only in profit seeking practices

Source: compiled by the authors

In terms of the challenges to the best use of the Guatemalan HEHHRR, many reform agenda have been revealed throughout the survey. In public sector, HR planning, fair and just recruitment system, and more incentives are the main issues addressed. In private sector, the extractive nature of private businesses in Guatemala is viewed as the most serious obstacle. The politicized nature of the Guatemalan civil society is viewed as a problem for the demand creation for HEHHRR. Nevertheless, no other sector revealed more problems than the Academia which is being largely condemned with such characteristics as no emphasis on research, politicized, corrupt, and benefited public university, and dominated by existing

hegemonic group in the academia.

Table 9. Challenges to the best use of the Guatemalan HEHRR for the Development of the Country

Sector of Employment	Challenges to the Best Use of HEHRR in Guatemala
Public Sector	<ul style="list-style-type: none"> - Sophisticated technical skills are not applied - Nepotism and personal connections are more important than merits and education - Lack of planning and long-term vision - Education is not important to become a civil servant, only political connections and activism - Public institutions discriminate those who have obtained postgraduate degrees abroad - Disincentives, poor salaries, instability, there is no civil or administrative career - It seems like there are specific vested interests for keeping the public institutions with poorly educated staff
Private Sector	<ul style="list-style-type: none"> - Entrepreneurship faces harsh conditions as means of production are totally concentrated in a few hands - The private businesses in Guatemala are only interested in extractive practices, not in the development of the country
Academic Sector	<ul style="list-style-type: none"> - There is no emphasis on research in the academic sector practice of Guatemala - Private universities provide more opportunities to innovate, public higher education in Guatemala extremely politicized and corrupt - Master and doctoral graduates are competing with lectures or professors with only bachelor-level degrees; ironically the latter enjoys hegemonic position
Civil Society	<ul style="list-style-type: none"> - Only international NGOs make the most out of talented Guatemalans, local NGOs are similar to political parties - Wrong perception that overqualified Guatemalans would not want to work in this sector

Source: compiled by the authors

CONCLUSIONS

HEHRR are critical infrastructure for a society to engage in the knowledge economy. Guatemala desperately needs to double its efforts to accumulate a skilled and well-prepared work force able to respond to the increasing pressures of globalization and the changing productive paradigms. As stated by the Task Force on Higher Education in Developing Countries (2000, 37) “collective action is needed to support, nurture,

and strengthen higher education... and the way universities serve the public interest". Worryingly, the domestic higher education system in Guatemala has proven to be insufficient to produce the advanced educated work force to meet the market demand.

The debate addressing education in Guatemala is still concentrated in primary education. The challenges faced at this level are used by several authorities and thinkers to deviate attention from tertiary education; however, higher education can no longer be neglected. This scenario welcomes the contribution of donor support to alleviate the shortage of highly educated Guatemala human resources. Since the 1980s, promising leaders have been educated at the postgraduate level with the valuable contribution of the international community; it is expected that the sending country, in this case Guatemala, would incorporate the graduates in the different areas of employment in order to make the best use of such scarce human resources.

The data collected and analyzed in this article must be considered in the context of the outcomes of the domestic higher education system. As this research defines "highly educated Guatemalan human resources" as those nationals who have obtained postgraduate education (master/doctoral), it is implied that a prerequisite for candidates to be accepted in postgraduate academic programs they must have obtained an undergraduate degree. That is why the structure, coverage, quality and general status of higher education in Guatemala determine to an important extent the characteristics of the individuals who would pursue further levels of education.

Based on the available data and information, it can be concluded that highly educated Guatemalan human resources are scarce. Even if we considered all postgraduate alumni both from national as well as from international universities, shortages in well-educated and advanced skilled workforce are seriously undermining the competitiveness of the country. On the other hand, producing such valuable human capital is complex and resource-consuming. Local universities at the postgraduate level do not have access to public funding, not even the San Carlos of Guatemala University. In Guatemala, all the postgraduate education programs in both public and private universities are financed by the students themselves. The case of the private higher education is even more acute as profit seeking practices and lack of educational loans contribute to the exclusion and only economic elites have access to higher education at this level (Roma 2006; Godinez and Tobar 2006).

Findings in this study indicate that the private business circle in Guatemala

regards academia (universities and research centers) as the main, and perhaps the only, pool of highly trained individuals, by contrast, the public sector is perceived as neglecting the importance of talented human resources for national development. Respondents who participated in this study provided different reasons to explain their perception. Private sector is viewed as more “meritocratic and capacity-based”. While nepotism and prevalence of political connections instead of qualifications are cited as constraints in public institutions, consequently acting as deterrent for the development of the country

The higher education system in Guatemala needs to develop serious effort to overcome a fundamental challenge lack of information and consistent registries of national coverage. Admittedly, San Carlos of Guatemala University has implemented the Direction of Registry and Statistics, in charge of at least documenting enrolment of students and general statistics. At the same time, the public university created different units in charge of collecting information about professors, employees, infrastructure, undergraduate and postgraduate academic offer; nevertheless, consolidated information is not available.

The scenario is as daunting in the case of private higher education institutions. Each university devotes isolated and stand-alone efforts to systematize its indicators with no accountability whatsoever. The fragmentation of the higher education system hinders any attempt to develop a diagnosis of availability of domestically educated and highly educated Guatemalan human resources.

The situation is even more critical for the overseas educated individuals. Estimations (Arenas 2012) indicate that only a small minority of returned graduates from foreign universities follow the procedures to incorporate their academic degrees obtained abroad. This restricts the production of reliable registries and information concerning overseas educated Guatemalans.

For years the debate regarding the allocation of scarce resources (public, private, from international cooperation, etc.) to solve pressing problems in all levels of education has privileged elementary and secondary education. At this point higher education and its enormous responsibility to form the skilled labor pool for the immediate needs of the economy and the society cannot be further delayed.

The academic sector is in urgent need to strengthen the quality of its administrative staff, researchers, even professors and faculty members. At the same time, the social benefits of incorporating the highly educated Guatemalan human resources could be wider and deeper. The case of San Carlos of Guatemala University is particularly critical. As the only

public university, this institution is expected to provide access to higher education for the people of Guatemala who cannot afford private or overseas higher education. Nevertheless, this mission has not been fulfilled yet, due to several challenges and difficulties such as governance, financial constraints and political interference.

Therefore, the mid-term solution to the current impasse of the Guatemalan case can be undertaken in two fronts: First, the domestic higher education needs a serious reform from the adoption of competitive environment in the public university system to the dramatic shift of the expenditure both from the public and private sector. Second, by maximizing the use of foreign training system offered by the donors, the current shortcomings in the higher education system could be addressed, i.e. having more professors educated at doctoral level, integrating higher levels of academic fields both vertically (offering more postgraduate programs in domestic universities) and horizontally (diversifying academic fields in undergraduate majors)³.

RECOMMENDATIONS FOR FUTURE RESEARCH

This paper attempts to contribute to the debate of the availability and the best use of highly educated Guatemalan human resources. Fellow researchers constantly quote periodical articles (Sacayon 2012; Godínez and Tobar 2006) facing the lack of academic research in Guatemala. In this sense this study encourages policy makers, higher education authorities and fellow researchers to build a comprehensive body of literature addressing the pressing issues related to higher education, HEHRR and international cooperation. For these among other reasons scarce development cooperation resources have been and are being devoted to finance postgraduate studies of Guatemalan potential leaders to take place in overseas universities located in donor countries.

Linkages between tertiary education and socio-economic problems in Guatemala are still understudied. Basic information and systematic studies addressing production and management of human resources in Guatemala are not to be found. Common sense indicates that information is power, decision making demands reliable statistics, diagnosis and work plans.

3 Key informants interviewed from the public, private and civil society sectors, as well as alumni from overseas academic programs coincide that international development cooperation could play a significant role in alleviating such shortages in highly educated Guatemalan human resources.

Another important topic to be explored is the role played by international donor support to address current challenges or complement existing efforts in educating a pool of highly trained individuals. The development of human capacity in Guatemala by means of overseas postgraduate education funded by foreign aid has been in place since the 1970s. Japan was one of the first donors to offer such opportunity to talented Guatemalans. The first scholarship trainees were invited to study medical science in 1974 (Embassy of Japan 2013). Since then other donor countries have adopted similar approach to cooperate with Guatemala, such as United States Fulbright Program in 1984, Germany and the DAAD⁴ in 1985, and the Netherland's NFP-NUFFIC⁵, as well as the MAEC-AECID⁶ of Spain in the 1990s. Later, more countries joined, like the United Kingdom with the Chevening Program, Korea with KOICA⁷ Scholarship Program, Taiwan and the IDCF⁸ and Mexico and its Scholarship for Foreigners' program in the mid-2000s.

4 German Academic Exchange Service (*Deutscher Akademischer Austausch Dienst*).

5 Netherlands Fellowship Programme of the Netherlands Organization for International Cooperation in Higher Education.

6 Spanish Ministry of Foreign Affairs and Spanish Agency for Development Cooperation.

7 Korea Cooperation Development Agency.

8 International Development Cooperation Fund.

REFERENCES

- Aldana, Carlos(2014), *Former Viceminister of Education*, interview by Kleinsy Bonilla, February 13.
- Arenas, Luis Fernando(2012), *Director General of the Institute for the Development of Higher education in Guatemala*, interview by Kleinsy Bonilla, november 15.
- Arredondo, Fernando(dir.)(2009), *Retos y alternativas de la educacion superior en Guatemala*, Olmedo, España.
- Brunner, Jorge Joaquin and Rocio Ferrada Hurtado(2011), *Educacion superior en Iberoamerica*, Informe, Santiago: Centro Universitario de Desarrollo CINDA.
- Calderon, Jose Humberto(2005), *Estudio sobre la repitencia y desercion en la educacion superior de Guatemala*, Guatemala City: UNESCO-IESALC.
- Castillo, Juan Manuel(2014), “Preciado Botin,” *Prensa Libre*, February 14, p. 6.
- Chamrbagwala, Rubiana and Hilcias E. Moran(2010), “The Human Capital Consequences of Civil War: Evidence from Guatemala,” *Journal of Development Economics*, Vol. 94, pp. 41-61.
- Fernandez, Dina(2013), *La USAC en Piltrafas*, September 21, Guatemala City.
- Fuentes, Juan Alberto(2013), *Former Minister of Finance of Guatemala 2008-2010*, interview by Kleinsy Bonilla, July 26.
- FUNDESA(Foundation for the Development of Guatemala)(2012), “Economic Perspectives for Guatemala, 2013,” May 21, Guatemala City: FUNDESA.
- Galvez, Estuardo(2006), “La USAC es el reflejo de la sociedad,” *Prensa Libre*, July 09, pp. 16-17.
- Godinez, Maria del Rosario and Luis Alfredo Tobar Piril(2006), *Los estudios de postgrado en la Universidad de San Carlos de Guatemala*, Report, Guatemala City: USAC/IESAL-UNESCO.
- Gonzalez, Ana Lucia(2013), “Por que tan pocos becarios?” *Revista D*, November 17, Guatemala City: Prensa Libre.
- Gutierrez Herrera, William Roberto and Francisco Bernardo Raul de la Rosa(2004), *Perfil del profesor universitario en el area de matematicas en la Republica de Guatemala*, Guatemala City: San Carlos of Guatemala University, School of Engineering.
- Hernandez, Violeta and Ana Lucia Blas(2013), *Vinculos entre Universidades y Think Tanks: Una propuesta*, Guatemala City: Saber America Latina.
- Hurtado, Paola(2011), “Los 312,697 universitarios ignotos,” *El Periodico*, April 03, pp. 7-11.
- Iteriano, Elder(2012), “Guatemala, de los mas rezagados en educacion en Latinoamerica,” *Siglo 21*, Decembr 18, p. 11.
- Knut, Walter(2009), “La educacion en CentroAmerica: Reflexiones en torno a sus problemas y ptencial,” Working Paper, Hamburg: Institute for IberoAmerica.
- Leon, Susana de(2013), “De Guatemala para el Mundo: Mentes que Brillan,” *El Periodico*, February 17, pp. 3-5.

- Maul, Hugo(2010), "USAC: Triste destino," *El Periodico*, February 22, p. 8.
- Medina, Efrain(2014), *Former Rector of San Carlos of Guatemala University*, interview by Kleinsy Bonilla, February 11.
- Menocal, Carlos(2006), "Crisis en la USAC genera pocos graduados," *Prensa Libre*, April 30, pp. 2-4.
- Ministry of Foreign Affairs of Japan(2013), *Study in Japan*, Jun 06, [accessed August 09, 2013], <http://www.studyjapan.go.jp/en/faq/faq10e.html>
- Moreno, Juan Carlos and Pablo Ruiz(2009), *La educacion superior y el desarrollo economico de America Latina*, Serie Estudios y Perspectivas, Mexico, D.F.: United Nations Comission for Latin America CEPAL.
- Parrilla, Ekaterina(2013), *National Secretary for Planning and Programming of the Presidency of Guatemala SEGEPLAN*, interview by Kleinsy Bonilla, May 04.
- Ponce Villela, Edgar Augusto and Amilcar Folgar Portillo(2007), *Caracterizacion de la cultura organizacional de la Universidad de San Carlos de Guatemala*, Institutional Report, Guatemala City: San Carlos of Guatemala University.
- Rama, Claudio(2006), "Los postgrados en America Latina en la sociedad del saber," *Informe sobre la educacion superior en America Latina y El Caribe 2000-2005*, UNESCO/IESALC, Caracas: Editorial Metamorfosis C.A., pp. 43-55.
- Rubio, Miriam(2013), *National Secretary of Sciece and Technology*, interview by Kleinsy Bonilla, October.
- Sacayon, Eduardo Enrique(2012), *Los sistemas de acceso, normativas de permanencia y estrategias de tutoria y retencion de estudiantes de educacion superior*, *Informe Nacional Guatemala*, Guatemala City: Institute for Interethnic Studies, San Carlos of Guatemala University.
- Schwartzaman, Simon(2002), "Higher Education and the Demands of the New Economy in Latin America," Background Paper, Latin American and Caribbean Department, Sao Paulo: World Bank.
- Steier, Francis and Cesar Yammal(2001), "La educacion superior en Centro America y Republica Dominicana," Discussion paper for the Conference in Higher education held in Guatemala, May 30-June 1st, Antigua Guatemala: World Bank.
- The Task Force on Higher Education and Society(2000), *Higher Education in Developing Countries. Peril and Promise*, Washington: The World Bank.
- Tobar, Luis Alfredo(2011), "La educacion superior en Guatemala en la primera decada del Siglo XXI," *Revista Innovacion Educativa*, Vol. 11, No. 57, pp. 69-80.
- Torres, Milton Alfredo(2008), "Los politiqueros se aduenan de la USAC," *La Hora*, February 19, p. 8.
- UNDP(2013), *Human Development Index Report "The Rise of the South"*, Research Report, New York: UNDP.
- UNESCO(2012), *Situacion educativa de America Latina y el Caribe*, Mexico City: National Secretariat for Public Education Mexico, pp. 89-96.
- UNESCO/IESALC (Institute for Higher Education in Latin America)(2006), *Informe sobre la educacion superior en America Latina y el Caribe 2000-2005*,

Caracas: Editorial Metamorfosis C.A.

UNICEF(2010), *El salto al norte: Violencia e impunidad del fenomeno migratorio en Guatemala*, Guatemala City: UNICEF.

World Bank(2013), *Country Classifications*, May 31, New York.

World Economic Forum(2012), *The Global Competitiveness Report*, Geneva: The Global Benchmarking Network.

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