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"WELL-BEING, SOCIAL INCLUSION AND SUSTAINABLE DEVELOPMENT"

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THE FIRST INTERNATIONAL DEVELOPMENT FORUM IN THAILAND
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Challenges of Upper Secondary and Vocational Education for Myanmar Migrants in Thailand

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Abstract

   This paper aims at exploring an alternative solution to migrant education that does not presume the needs to enroll migrants in public schools from a student-based perspective. Integrating migrants into the receiving country through public education is not always the most desirable approach to promote social inclusion, especially for teenage non-permanent migrants with liminal legal status. Meanwhile migrant learning centers (MLCs) have been established by NGOs and community-based organizations to better serve the educational needs of migrant students. Majority of these MLCs are located in Mae Sot, a town that borders with Myanmar and with a large number of undocumented migrant workers. Only three MLCs in Mae Sot provide high school education, and one of them employs a transnational curriculum, which is consisted of three different pathways. This unique design opens up opportunities for students to have access to higher education offered by universities in Thailand, Myanmar, or even in Western countries that recognize GRE scores. Based on the testimonies of 15 students who are students of migrant learning centers (MLCs) in Mae Sot, Thailand, this study finds that nonformal education with a transnational curriculum can better serve the needs of migrant youth with limited Thai language proficient and who are uncertain about their future's place of residence.

Keywords: Transnational Curriculum, Non-formal Education; Migrant Students

1. Introduction

   In the midst of rapidly rising number of international migrants from 173 million in 2000 to 258 million in 2017, subjects pertaining to migration and promoting social inclusion in the host country have been central to policy debates (United Nations, 2017). Within such a large group of international migrants, there are young migrants separated from families and those who move with their families. As of 2014, migrant youth between the age of 15 and 24 is found to constitute a reasonably significant portion (12 per cent) of the total international migrant population (Global Migration Group, 2014). These young migrants are in a critical stage of transiting from childhood to adulthood and often have to seek opportunities that can further education or enter the workforce. Migrant education is therefore pivotal in preparing them for their future career and is recognized as

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their right in international convention regardless of their legal status. Myanmar migrant youth in Mae Sot, Tak Province of Thailand are notable examples who have been confronted with various challenges in the pursuit of their education.

While education policies directed towards migrant population are important to determining if and how migrants can access education, challenges faced by migrant students are also contingent on the complex nexus of various non-policy related components. For instance, even if opportunities to study in Thai state schools are made readily available to migrant youth, those who plan to enter workforce in Thailand early or return to Myanmar may choose vocational training schools and MLCs over public schools of Thailand. In addition, migrant youth between the age of 15 to 24 may prefer hands-on skills to prepare them to enter the job market. Consequently, regular classroom settings and curriculum at Thai state schools may not be sufficient to cope with needs of migrant students. In such cases, whether or not to attend Thai public schools may not be migrants' major concern and the challenges that migrant youth encounter can therefore be substantially different from issues that have been depicted in existing literature. In order to effectively tackle problems of migrant education in Thailand, having a more comprehensive view on education challenges that migrant youth encounter is crucial.

This study, therefore, attempts to understand reasons behind migrant students choosing MLCs over Thai public schools and the associated education challenges from migrant youth's perspectives. As such, the author has interviewed a total of 15 students aged 15 to 24 from three MLCs, namely Children Development Centre (CDC), Social Action for Children and Women (SAW), and Youth Connect in Mae Sot. The key finding is that transnational curriculums offered by MLCs at Mae Sot open up the opportunities for students with liminal legal status to pursue higher education in the host country. In addition, being able to remain a student at any of the MLCs in Mae Sot and having a student ID allow migrant youth to avoid the risk of deportation in the local area. In other words, enrolling in MLCs helps to promote social inclusion through enabling the possibility for migrant students with liminal status to pursue higher education and have additional time explore job opportunities.

The next section outlines the situation of Myanmar migrant students in Mae Sot, Thailand. This is then followed by Section three, a discussion on how existing studies address migrant education in major migrant receiving countries in contrast with the case of Myanmar migrants in Thailand and a proposed conceptual framework. In Section four, more focus is devoted to case selections and findings. Conclusion, implication on potential future research investigations and current study's limitation are included at last, in Section five.

2. The Circumstance of Myanmar Migrant Students in Mae Sot, Thailand

Among all the migrant receiving countries in the world, Thailand is known to be a migration hub of which Mae Sot is home to the largest number of community learning centers for Myanmar migrant students. With the international migrant population growing at a high average rate of more than 6 percent annually, Thailand has about 3 million migrant workers out of its total 3.4 million foreign population as of 2011 (International Organization for Migration (IOM) Thailand, 2011).These labors are mainly from its neighboring countries, namely Myanmar, Cambodia and Laos (Dowding, 2014). Although the exact number of migrant workers can hardly be verified due to many of their irregular statuses, 64 to 75 per cent of migrant workers are found to be from Myanmar (Mahidol Migration Center, 2014). Some workers also bring their family and young dependents to Thailand (Huguet & Punpuing, 2005; Chantavanich, Vungsiriphisal, & Laodumrongchai, 2007). Migrant youth who have not reached the age to enter the workforce are usually placed in Thai schools or migrant learning centers (MLCs) in the community. The largest number of learning centers (65 out of 106) with the highest enrollment of Myanmar students (13,459 out of 18,312) are in Mae Sot, a border town in Tak province of Thailand (Dowding, 2014).

Despite that these migrant students are entitled to receiving free education in Thai state schools, many migrant parents choose to put their children in MLCs because of unbearable indirect financial costs, legal concerns and language barrier. To begin with, given that migrant workers generally earn lower wages than local Thai people, some parents cannot afford the indirect costs, such as school activity fees and school uniforms, for putting their children in state schools. Another problem is that as many migrants are not legally registered, some parents feared that sending their undocumented migrant children to schools may expose their illegal status to state authorities (Chantavanich, Vungsiriphisal, & Rukspollamuang, 2013). Moreover, the intellectual ability of students who do not have an adequate command of Thai language can hardly be assessed as Thai language is the main language used for the placement test. Migrant students who came to Thailand at an older age will therefore always end up having to start from grade one and becoming an overage student because they cannot pass the placement test. Hence, although Thai government recognizes migrant students' right to free education, only around 50 percent of migrant children were believed to be attending Thai state schools by 2012 even after the significant rise of enrollment number in 2005 (Nawarat, Thailand education policy for migrant children from Burma, 2012). MLCs, on the other hand, continue to exist as an alternate form of education for migrant students even though they tend lack a consistent curriculum and the qualification needed to prepare students for either transferring to Thai state schools or back to schools in Myanmar.

3. Existing Studies on Migrant Education and the Case of Thailand

3.1. International Migration and Migrant Youth Education

As proposed by Sjaastad (1962), migration can be viewed as an investment in the "human agent", which resembles the idea of how education has been commonly perceived as an investment in the human capital. With this shared concept, migration can therefore be interpreted as a means for migrants (agents) to invest for a better future.

Nonetheless, the impact of migration on children and youth's education has not been adequately studied as depicted by Harttgen & Klasen (2009) even though young generation is the key to future development of societies. Their study is pertinent to the case of international migrant children and youth in Europe and employed "Dimensions of Well-being" model developed by UNICEF to consider education as one of the many contributing factors to a child's well-being. One of their major claims is that promoting educational opportunities for migrant children is pivotal because such ensures the long-term economic and development of their countries.

3.2. Integration and Assimilation Approach

Meanwhile, other discussions mainly dwell on the integration and assimilation concept for immigrant education in country-specific contexts of those traditionally known immigration countries such as USA, Canada and Australia. Portes and Zhou (1993), for instance, proposes the idea of segmented assimilation where refugees arriving in the United States since 1970 are less likely to be integrated into the upward segment of the White community. In contrast to the "segmented 'underclass' assimilation', Boyd (2002) finds that offspring of minority immigrant, namely "people of color" or in a term she coined "visible minorities" exceeded the education attainment of other non-visible-minority groups in Canada. Yet, other than portraying societies as stratified and then investigating which segment of the society integration takes place, some scholars concentrate more on identifying problems that hinder immigrant students to assimilate into host societies.

Mcbrien (2005), for instance, recognizes language acquisition as an important need of immigrant and refugee students to help them succeed in the United States. In a more recent study, Tani (2017) indicates the issue of lack of international transferability of human capital resulting in over-education and skill wastage on highly educated immigrants in Australia. In sum, as immigrants are those who plan to settle in the receiving countries, these studies predominantly rest on the presumption that assisting immigrant students to adapt into host countries is crucial.

Apart from scholars who attempt to address education needs of immigrant newcomers, other researches of the United States also examine challenges of highly mobile students within the country.

In the studies of Solis (2004) and Reyes & Salinas (2004)they both inspect the need of secondary school students who are children of intrastate or interstate migrants. Some identified hindrances of the education include late entry or early withdrawal in school, difficulty in transferring school records, maintaining records of credit accrual and accessibility of education. These observations coincide with the theory of incompatibilities, a conceptual framework developed by Jose Cárdenas and Blandina Cárdenas (1977) in which mobility is identified as one of the five broad areas of incompatibilities that prevent disadvantaged children from enjoying the same success in schools of the United States.

3.3. Education of Myanmar Migrant Youth in Thailand

Different from the case studies mentioned above, however, Myanmar migrants in Thailand are clearly not internal migrants and can neither be classified as immigrants or short-term migrants. A survey conducted by International Organization for Migration (2013) shows that majority 79.9 per cent of Myanmar migrants intend to return to Myanmar, but nearly half them do not have a return time frame in mind (ibid). Hence, as they lack the will and legal means, they can neither be seen as immigrants who intend to settle in Thailand permanently nor short-term migrants who plan to return to their home country in the near future. Nonetheless, existing studies tend to interpret the education needs and challenges of migrant youth from Myanmar based on the idea of integration through increasing their accessibility to public education.

In fact, knowing various education obstacles faced by migrant youth, scholars tend to trace the underlying causes for underperformance in the delivery of migrant education to policy-related issues of the Thai government. Low enrollment rate of migrant students in Thai state school is perceived as an indicator of failure in education policy. Existing studies then account for elements that impede migrant students' school enrollment and problems they face at schools.

Dowding (2014) estimates that only 34 per cent of all migrant children are enrolled in Thai school. Some researchers tie such a problem to the liminal legal status of migrant workers who feared that sending their children to schools can subject them to risk of deportation or detention (Nawarat 2017; Petchot 2011). Moreover, other issues are pertaining to school policies of insensitive placement test based on Thai language proficiency skills and no recognition of the education students previously received in Myanmar (Nawarat 2018). These policies resulted in a large number of overage students as migrant students are placed in lower school grade levels that are inappropriate for their age.

Additionally, other literatures identify the low enrollment problem as a gap between national policy goal and partial compliance of local schools. Despite that non-Thai students are also entitled

to right of education under the national policy, some local schools are unwilling to accept students without proper documentations (Arphattananon, 2012; Dowding, 2014; Petchot, 2011). In other words, education challenges are mainly recognized as those that hinder migrant youth from attending Thai public schools. Such challenges, however, may not be applicable to migrant students and families who do not intend to place their children in Thai schools.

3.4 Conceptual Framework

Consequently, a more overarching view on education challenges that migrant youth encounter is essential to capture the needs of them. As such, this paper therefore aims at complementing previous researches by exploring issues from views of Myanmar migrant students. Notions of both who intend to be enrolled in Thai public schools and those who choose only to attend Migrant Learning Centers (MLCs) are taken into consideration. As the types of education challenge that migrants encounter largely depend on existing conditions and future aspirations they have before making their school choices and obstacles emerge after attending schools, this research proposes a conceptual framework that is comprised of the dynamic among existing conditions, future aspirations and selected form of education (Figure 1).

Existing conditions include factors such as Thai education policy, liminal documentation status, language proficiency, age, length of stay in Thailand. They are likely to restrict school choices. As discussed in the previous section, education policies which are less migrant friendly including insensitive placement test based on Thai language proficiency skills, no recognition of former education received in Myanmar and unwillingness of local schools to accept migrant students are impediments to enrolling migrant youth in Thai schools. Similarly, a liminal documentation status may subject students and their families to risk of deportation and hence prevent students from attending Thai schools. Inadequate command of Thai language is another important determinant because such place students in a lower school grade level which may demotivate them from completing their education. Also, age is a worth-considering component since older youth may prefer practical skills that prepare them for job market than traditional classroom curriculum. Length of stay in Thailand also matters because youth who have stayed in Thailand for a longer period of time may have more advanced Thai language level and possibly prefer public schools of Thailand over MLCs. In brief, migrant students and their families can make their school selection predominantly based on these existing conditions or a combination of these components with their future plans.

Future aspirations are mainly categorized into career choices among tertiary education, work or both, and the geographical locations of Thailand, Myanmar or other countries to pursue their career. Only tertiary education is accounted for in the framework because other forms of non-formal

education, namely language or evening classes, are always available regardless of education level and therefore do not limit current school choices. In the meantime, the prospective locations to further education or seek jobs are pivotal factor since youth who intend to go back to Myanmar are probably more likely to choose MLCs than Thai schools. Yet, these future plans cannot be realistically made without accounting for existing conditions. For instance, older migrant students with inadequate Thai language proficiency may have a higher willingness to return to Myanmar and leading them to choose MLCs over public schools in Thailand. Hence, both existing conditions and their future prospects help to shape migrants' education preferences.

Nevertheless, challenges can also originate from the selected form of education. The types of education can mainly be divided into formal and non-formal education. Thai public school is the main type of formal education. On the other hand, non-accredited MLCs that are funded by NGOs are typical examples of non-formal education. The MLCs in Mae Sot consist of various kinds of program which include schools that align with the Burmese curriculum, integrate both Thai and Burmese curriculum and vocational training. Meanwhile, in case migrants do not have a future plan, these school choices may be decisive elements that govern the future prospects of migrant students.

In sum, referring to the conceptual framework below, existing conditions can be present as (a) limitations that directly restrict migrants' school selection. Yet, while existing conditions may impact future aspirations of migrants, they do not become challenges of education until such (b) combined factors are taken into consideration when making the education choices. Other than obstacles that migrant students may encounter before choosing their schools, (c) challenges can also derive from the selected forms of education.

Figure 1 Conceptual Framework on Determinants of Challenges of Migrant Youth Education in Thailand
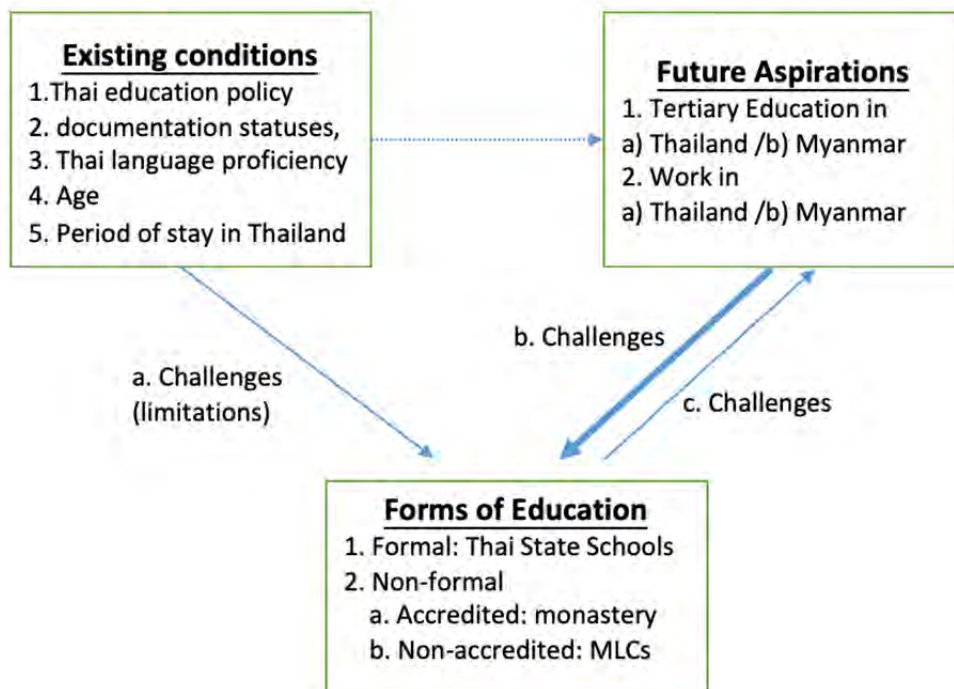
4. Case Selection and Findings

4.1. Case Selection

As this study seeks to identify education challenges encountered by young migrants who are in the critical stage of transiting from childhood to adulthood, further investigations on students aged 15 to 24 of three different MLCs in Mae Sot have been conducted in reference to the conceptual framework. In congruent with Coombs and Ahmed's (1974) definition of nonformal education, these MLCs offer "…organized, systematic, educational activity carried on outside the framework of the formal system to provide selected types of learning to particular subgroups in the population…".

Nevertheless, given that the amount of remuneration MLCs can provide for teachers are rather limited and finding qualified teachers to teach upper secondary level courses are difficult, there are only three schools in Mae Sot offer high school education. To better fathom how the availability of education choices might have impacted students' future aspiration, the researcher chose the two high schools that have more flexible curriculums. In addition, interviews with students from a local vocational training school has also be included in an effort to compare the differences in students' perceived challenges and their future plans. Thus, the two selected high schools are the "Children

Development Centre (CDC)", the "Social Action for Children and Women (SAW)" and together with "Youth Connect", a local vocational training school.

4.1.1. Children Development Centre (CDC)

With the special design of offering three different pathways, namely Thai, Burmese and International pathways, the "Children Development Centre (CDC)" offers a transnational curriculum that caters to students' needs. CDC was originally founded as an education department to take care of children of medical staff   working at the Mae Tao Clinic (MTC), a highly reputable medical clinic that provides free medical services for Burmese migrants in Mae Sot. It has later expanded to provide affordable education to the Myanmar migrant community with a limited number of boarding house service for migrant students. The current total number of enrolled students is estimated to be around 900 and it is a popular choice among students who wish to pursue post-secondary education in Thailand and/or overseas. Although the school itself is not accredited by any government, the Thai pathway has been accredited by the Thai government as a nonformal education program. Furthermore, the CDC also partner with Beam Foundation, a non-profit organization based in Chiang Mai to help students pass the General Education Development (GED) exam, which if passed, the certification serves as a recognized credential of high-school level academic skills in the United States and Canada. Hence, students who pass the GED exam can apply for Thai universities or other overseas' universities as international students.

4.1.2. Social Action for Children and Women (SAW)

Social Action for Children and Women was first established as a community based organization (CBO) in 2000 and became an officially registered Thai foundation in 2017. One notable feature of SAW is that boarding house services are provided to almost all residents as majority of them are orphans. The estimated number of residents is about 165 and more than 60% are orphans who were brought to SAW since infancy. Many of these orphans are sent to Thai public schools because children who are born in Thailand with relevant birth certificate have a higher chance of becoming Thai citizens if and only if they attend Thai public schools. The founder of SAW thinks that helping these orphans to become Thai citizens can significantly boost their future opportunity as they have no home to return to in Myanmar. Additionally, SAW also offers onsite education that follows the Burmese curriculum   and is accredited by the Ministry of Education of Myanmar as nonformal education.

4.1.3. Youth Connect

Youth Connect is a foundation that provides vocational training to older migrant students. Different from other non-profit organizations that rely on donors' funding, the foundation has self-sustaining income from the guesthouse managed by students and its staff members. They enroll about 25 students annually and teach basic Thai language, English and life skill training. Moreover, Youth Connect is well-known in the community for pairing students up with local employment opportunities offered by its partnered companies.

4.2. Findings

To understand challenges encountered by Myanmar students during this critical stage of transition, three semi-structured focus group interviews have been conducted. A total of 15 students aged 15 to 24, five from each selected school, respectively participated in the interviews. The selection tries to include as diverse pool of population as possible by taking into account their ethnicities, languages they speak, length of stay in Thailand, their religious belief, etc. Also, as many students are with liminal status, only assigned numbers preceded by first letter of their school names instead of the names of students are used when referring to their testimonies in order to protect their identity.

In sum, the main focus can be divided into two areas: why students (and their family) chose MLCs over Thai schools and their associated challenges. Pertaining to the reasons of selection, the decision to be enrolled in MLCs was made because some prefer the special curriculum of international pathway offered by CDC, free education provided by SAW and the possibility to explore job opportunities at Youth Connect.

Regarding the associated challenges, in reference to the conceptual framework, the two most pivotal factors that determine migrant students' (and their family) choice of school and future aspirations are their documentation status and Thai language proficiency. Also, language barrier is another frequently stated problem where migrant students found it difficult to acquire necessary Thai language skills. Other education challenges identified by students include family pressure in which elder sons or daughters do not have much time to study as they have to take care of their younger siblings and financial burden. Within the scope of financial difficulty, unaffordable living expenses and limited scholarship information to help them to pursue higher education are the two main issues. Meanwhile, one commonly shared perspective is that almost all of them view enrolling the MLCs as a way to retain a valid documentation status in Mae Sot during the transitional stage while they are still exploring opportunities about their uncertain future.

4.2.1. Reasons for Choosing MLCs over Thai Public Schools

As students who are enrolled in CDC and SAW are slightly younger than Youth Connect, a vocational school, the reasons for school selection also vary. In regards to students of CDC, three out of five students interviewed mentioned CDC's international pathway is what attracted their family. Others also included diversity of the school, affordable quality education and more scholarship information to support their education needs as why they made CDC their choice of education.

Student C7 [interviewed on May 22, 2019]: "…I have chosen to take the pre-GRE class because I plan   to pursue my college education in the United States where my close relative reside…When compared with other MLCs or Thai schools, CDC has more scholarship information for migrant students and that's why I like it here…"

In regards to SAW, however, as majority of students were orphans, many did not choose the school but were simply raised there. Some are enrolled in both Thai schools and the part-time nonformal education programs provided onsite at SAW. For others who came to SAW by choice and exclusively for its Burmese education, free education using Burmese curriculum and complementary housing is what made this school their choice.

Student S3 [interviewed on May 24, 2019]: "…I live in Myawaddy [a border town on the Myanmar side and about 20-minute drive away from Mae Sot] and my parents sent me here because this school is more affordable when compared to the schools in Myanmar and close to where I live.."

For Youth Connect, most students have already completed their education and are in the process of preparing to retake the GRE test or Burmese matriculation test for college entrance in Thailand or Myanmar respectively. All students interviewed perceived Youth Connect as a midpoint to help them gain more job-related skills while retaining a valid ID in Mae Sot to explore other work or education opportunities during their transitional stage.

Student Y4 [interviewed on May 24, 2019]: "…I want to do distance learning, the type of education where you can do over internet you know, but I also need a job here. For that, I need to have a valid work ID, which I cannot have unless I have found a job. So, students ID of Youth Connect allows me to stay in Thailand [Mae Sot, Thailand] without worrying about being deported. This way I can still continue to look for job here in Mae Sot.

These testimonies show how having a transnational curriculum (international pathway), affordable education and the possibility of retaining a valid ID that prevents students from being deported are main reasons for them to choose MLCs over Thai schools.

4.2.2. Education Challenges Associated with the Selected Schools

Nevertheless, when it comes to the problems that students have encountered, most students from all three schools brought up finance as their shared primary concern followed by language barrier.

A CDC Student (C4) [interviewed on May 22, 2019]: "…there is a scholarship offered by Child Dream to help us afford our college education, but they limit that to one person per family. Since my brother has been receiving it already, I will no longer be eligible to apply when the time comes for me to pursue college studies…I will have to look for something else…"

A Saw student (S2) [interviewed on May 24, 2019]: "…Financial problems are my main concern in the future, but I think I can solve it by working…"

A Youth Connect student (Y2) [interviewed on May 24, 2019]: "I want to pursue further education in Myanmar, but the matriculation exam is hard and expensive to pass…"

When it comes to language barrier, it was mainly bought up by CDC and Youth Connet students as their perceived challenges.

C4 came to Thailand when she was 15 years old and has been living in Thailand for five years already, but found the Thai language and English extremely hard to master [interviewed on May 22, 2019]: "…I do not think I can pursue higher education because I don't know enough Thai and English, but I want to open a bakery…So, I guess I will apply for Youth Connect after I am done with my high school here at CDC…"

Y4 who has been in Thailand for only 1 year and his goal is to find a job in Thailand also expressed similar concerns with learning the Thai language [interviewed on May 24, 2019]: "I just got here last year and found it very difficult to communicate with people here…My communication skills are generally bad, but Thai is hard to learn…"

Other challenges shared by students across the three schools are mainly related to their family such as having to spend time taking care of siblings and not enough time for studying, hard for them to meet their family, and lack of support from their family in general.

5. Conclusion, Implication, Limitation

5.1. Conclusion

In conclusion, this study intends to complement existing literature through providing the inadequately addressed analysis of education challenges in local context of Thailand, adding a unique case of migrant education that are not compatible with integration strategy. In other words, integrating students into public schools of the host country is not the only way to promote social inclusion. An inclusive education matters more on addressing students' needs than merely applying access to the same type of education regardless the actual circumstance of students.

Consequently, the three selected MLCs demonstrated exemplary curriculums that put the needs of Myanmar migrant students' needs first. With their liminal legal status and going through the important stage of moving from childhood to adulthood between the age of 15 to 24, many Myanmar students are still ambivalent about their future path. Enrolling in Thai schools is not optimal for them because of language barrier. Even if they can successfully complete the Thai education, such high school credential would not be helpful for them to find a job or apply for a college as a local student unless they first obtain a legal status. Furthermore, Thai curriculum can hardly be relevant for those who want to pursue higher education in their home country, Myanmar. Other credentials such as GED might be more useful for those who wish to continue their university education in Thailand student (because it is hard to obtain Thai citizenship) or in other countries as an international. On top of that, some might merely need life skill training to prepare them for the local job market. Hence, the transnational curriculum presented by CDC, accredited Burmese nonformal curriculum provided by SAW and vocational training offered by Youth Connect are crucial in filling the gaps between regular Thai school education and the context-specific education needs of teenaged migrant students from Myanmar.

5.2. Implication

While existing literature has provided rich information on various cases of migrant education, this study poses questions for potential future investigations on the subject matter. Firstly, as previous researches mainly focus on education obstacles for migrant students to enroll in and while attending Thai state school, this study offers a more overarching analysis on factors involved when

making their school decisions together with expanding types of available education options to more than merely Thai public schools. This would help to portray a more comprehensive picture of challenges faced by migrant students and the kind of assistance they need.

Secondly, Myanmar migrants in Mae Sot posits a case that is uniquely different in which neither exclusion or the commonly adopted integration can be the best strategy to cope with the needs of migrants. As mentioned in the study of Griffiths and Ito (2016) and Dowding (2014), due to the liminal documentation status of many migrant workers from Myanmar, many of them do not plan to stay in Thailand for life and hence they are uncertain of whether their young dependents should receive education based on Thai or Burmese curriculum. This research, therefore, would like to shed some lights on the necessity of developing a more resilient transnational curriculum for the migrant community.

Thirdly, the case of migrant students from Myanmar in Thailand also raise a question on the commonly accepted right-based approach for education. Current expectation on the provision of migrant education mainly centers on the right-based approach where government of the host country is expected to be the prime duty bearer to provide the same public education for all eligible individuals regardless of their nationalities. The public education provided is therefore structured based on the host country's curriculum that prepares students to assimilate into the society of the host country. Yet, for migrants with no plan of staying permanently such as migrants from Myanmar in Thailand, the strategy of integration does not seem to suit their circumstance. In addition, for young migrants who wish to pursuit education of their home country in a different country, whether the government of the host country should be the duty bearer is also questionable.

5.3. Research Limitation

Although this study aims at encompassing voices of migrant students from diverse backgrounds, the geographic location of Mae Sot with a large number of ethnic Karens could have resulted in an overrepresentation of Karen people's opinions. As Mae Sot borders with the Kayin state of Myanmar where majority of Karens reside, many migrants in Mae Sot are Karens fleeing from internal wars between the Karen army and national government of Myanmar. In fact, 8 out of the 15 selected interviewees reported they were ethnic Karens or with Karen ancestry. Nevertheless, without knowing the ethnic composition of the Myanmar migrants' population in Thailand as migrants are categorized based on nationality and not ethnicity, there is no credible way to verify whether this is an overrepresentation of the Karens. On the other hand, this could also be a reflection of the actual circumstance in which Karens constitute the largest number of the overall Myanmar migrant community in Thailand.

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Thailand's 3rd National Human Rights Plan (2014 - 2018) - A Prophecy or an Obligation: A Case Study of Southern Muslim IDPs in Krabi

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Abstract

This paper explores how the implementation of Thailand 3rd National Human Rights Plan (TNHRP) enhances the protection of internally displaced Persons (IDPs) with a focus on the Southern Thailand Muslim (STM) who flee the violent conflict from the three deep southern provinces (Narathiwat, Pattani, and Yala) to Krabi, Thailand, due to violence and human rights violations, including untold economic hardship caused in the post conflicts era. As a right based approach to development, the paper aims to investigate the effectiveness of the TNHRP in overcoming the inherent human rights myths and misconceptions to prevent further IDPs crisis in the south crisis and protect Muslim IDPs in order to creates an environment in which rules, dialogues, rights, access to opportunities and host communities dealings with IDPs are enhanced, established, and defended for the interest of all parties. The paper conclude that although gross and systemic violations are not prevalent, IDPs protection has however been treated as a prophecy at the implementation level, rather than a state obligation to intervene on behalf of the marginalized, poor and vulnerable groups in its society as a national, regional and international obligation it owes them.

Keywords: *rights-based development, Violent conflict, Southern Thailand, IDPs.*

ABBREVIATIONS AND ACRONYMS

GRID	Global Report on Internal Displacement
IDPs	Internally displaced persons
IDCM	Internal Displacement Monitoring Centre
NHRP	National Human Rights Plan
STM	Southern Thailand Muslim
FMR	Forced Migration Review
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
US	United States

LIST OF FIGURES

Conceptual framework

I. INTRODUCTION

"Internal displacement is the great tragedy of our time. The internally displaced people are among the most vulnerable of the human family"

Kofi Annan, Former UN Secretary General

Internal displacement remains a critical development problem that challenges the sustainability of the development achievements record in the 21st centrality and threatens global peace. Globally, about 41.3 million people are internally displaced by the end of 2018, according to 2018 GRID - Global Report on Internal Displacement (IDCM, n.d.). Internally displaced people (IDPs) has an authoritative definition under the 1951 Refugee Convention and the Guiding Principles which defines IDPs as "Persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized State border" (Guiding Principles on Internal Displacement, 1998).

The number of IDPs increased by 2.3 million with about 13.6 million people newly displaced due to conflict or persecution internationally in 2018 (UNHCR, 2019) and remains a major threat to societal coexistence.

Although the history of refugees and/or internal displacement of people gained global attention in the end of the WWII due to the Palestinian refugees ugly experience, in Thailand context, it dates back to 1890s when the Muslim sultanate of Pattani was annexed by Siam (the present Thailand) in the Anglo-Siamese Treaty of 1909. Nonetheless, it was not until 1975 that the Thai government technically recognized "refugees" when it invited the United Nations High Commissioner for Refugees (UNHCR) to begin work in Thailand (UNHCR, n.d).

Despite being a transit hub to about 100,000 refugees and asylum seekers (Amnesty International, 2018) from Asia, the middle, and recently Africa, including and hosting refugees from Burma/Myanmar for more than three decades, the recognition of refugees remains a myth and controversial. Thus, the nation is yet to ratify the 1951 Refugee Convention. This makes it complicated for the implementation of effective mechanisms that will enhance the protection of its own internally displaced persons, especially those fleeing from the insurgence in the deep south of Thailand. And as IDMC Thailand, (n.d.) also noted, "no systematic mechanism exists to identify and provide basic assistance to displaced people" in Thailand despite having a nation human right plan that guarantees their protection, especially in the deep south.

This also reflect in the three deep southernmost provinces of Thailand where prolong conflict has forced over 41,000 to flee the region for survival due to gross and systemic human rights violations and crimes against humanity by both the Thai military and the insurgence groups that ranges from forced disappearance to rape, assaults, child soldiers, and targeting of civilians etc., for many decades (Amnesty International, 2018, Human Rights Watch, n.d.).

At the root cause of the conflict is the lingering and futile rights-based ideological identity struggle anchored on the consistent efforts to suppress the sources of political authority of the Malay system (Terwiel, 2005) and the social organization of Malay society between the 54.5 million (87.2%) Buddhists - the Bangkok-based-elites of Thai Buddhist backgrounds - of Siam kingdom (the present Thailand) and the 1.4 million (18%) southern Muslims - inheritance of the formal Pattani kingdom who are of Malay Islamic backgrounds, out of the 7.5 million (12%) Thai Muslims. This struggle dates to the aftermath of the 18909 amalgamation when what I will term as "Siam's policy of forced assimilation", or "internal colonization" as Horstman, (2017) described it started.

Like in Africa, and South America where similar trends festers, the struggle is a legacy of colonial relics in Asia. Then, the colonial frontiers was constructed to serve the economic and political interest of the occupying powers of the colonizers (the Great Britain) with little or no references to the negative impacts it will have on the minority groups that such non-consultative partitioning (done via mapping and census) that tears a people apart by imposing hard borders on them (Thongchai, 1994).

Since then, distrust among both factions led to evolution of insurgence movements against the Thai Government that has claimed over nearly 6,543 to 7,000 lives in Thailand in 12 years alone (Bangkok Post, 2016, The Straits Time, 2017). Despite the huge cost on both parties, efforts to reconcile both factions along right-based ideological fault-lines remains futile, especially because of lack of political will and existing gaps in the national institutional legal framework. For instance, Chapter 2, Section 7 of the general provisions of the Constitution of the Kingdom of Thailand (Interim), B.E. 2557 (as amended) , B.E. 2560 (2017), technically wills the divine right of the top leadership role (the head of the state) in the union to the Siam Buddhists majority by upholding that the Thai most revered institution must be led by a Buddhist (Unofficial Translation of the Constitution of the Kingdom Of Thailand, n.d.), Technically, such provision permanently alienates the Muslim minority from the right or even chance of assuming such revered leadership position that serves as the pillar of peace and prosperity of the Kingdom, despite the same constitution granting freedom of religion to all (Royal Thai Embassy, Riyadh, Kingdom of Saudi Arabia, n.d). To compound the issues, Chapter II, section 6 of the same constitution prevented the opportunity to even critique the system for improvement.

Consequently, the prolong struggle has forced about 41,000 people (IDMC Thailand, n.d.) to flee the deep southern region because little or no attention is paid to how the implementation of the Thailand 3rd NHRP protects the vulnerable communities against future hatred that is felt by the minority against the majority (Horstman, 2017). For

example, following a major bomb blast in Bangkok, the Thai police circulated an order dated Sept 9 to many campuses ordering the universities to report the population of Muslim students enrolled into each institution, including details of their affiliations to any Islamic sects and hometowns. This sparked an outrage among the Muslims student and human right activists who claimed it stereotypes Muslim students as "prime suspects of violence and violates their rights. Nonetheless, Pol Lt Gen Sarawut Karnpanich, commissioner of the Special Branch Bureau, and Prime Minister Prayut Chan-o-cha defended the operation as "normal security routine", citing national security as the reason to legitimize such operation (Bangkok Post, 2019).

II. **Problem Statement**

When Thailand adopted the 3rd National human rights plan (NHRP) in 2014, it subscribed to a 'rights-based' approach to development. Throughout the 11 dimensions and 15 targets of the NHRP, people are at the center and the individual rights and freedoms are unwaveringly linked with fair and equitable development practices. Paramount in the approach is the strong emphasis on international humanitarian law, international law and the universal human rights, which makes it possible for the IDPs to evaluate the extent to which human rights are being respected and expose any risks or impediments that IDPs encounter in exercising their rights. It becomes even more complicated in the deep south where "rights abuses persist in the conflict between separatist groups and the government, despite the government promising to reform" (Human Rights Watch, n.d.).

Besides, the lack of political will and misconceptions that surround the debate about IDPs rights make it hard for the government and the host communities to grant IDPs the access to the needed protection or opportunities to resettle permanently in Krabi, or make enough for a living to be able to lead a better life there or go home and establish themselves.

As people fleeing from conflict, they have lost everything. The lack of effective implementation of the NHRP (especially target 7 and 14) that prevent the IDPs access to small grants implies lack of capital that prevents them from establishing major businesses like the locals in Aeo Nang, Krabi will subject them to a master-servant relationship that could be very hard to break in the long run without triggering further violence.
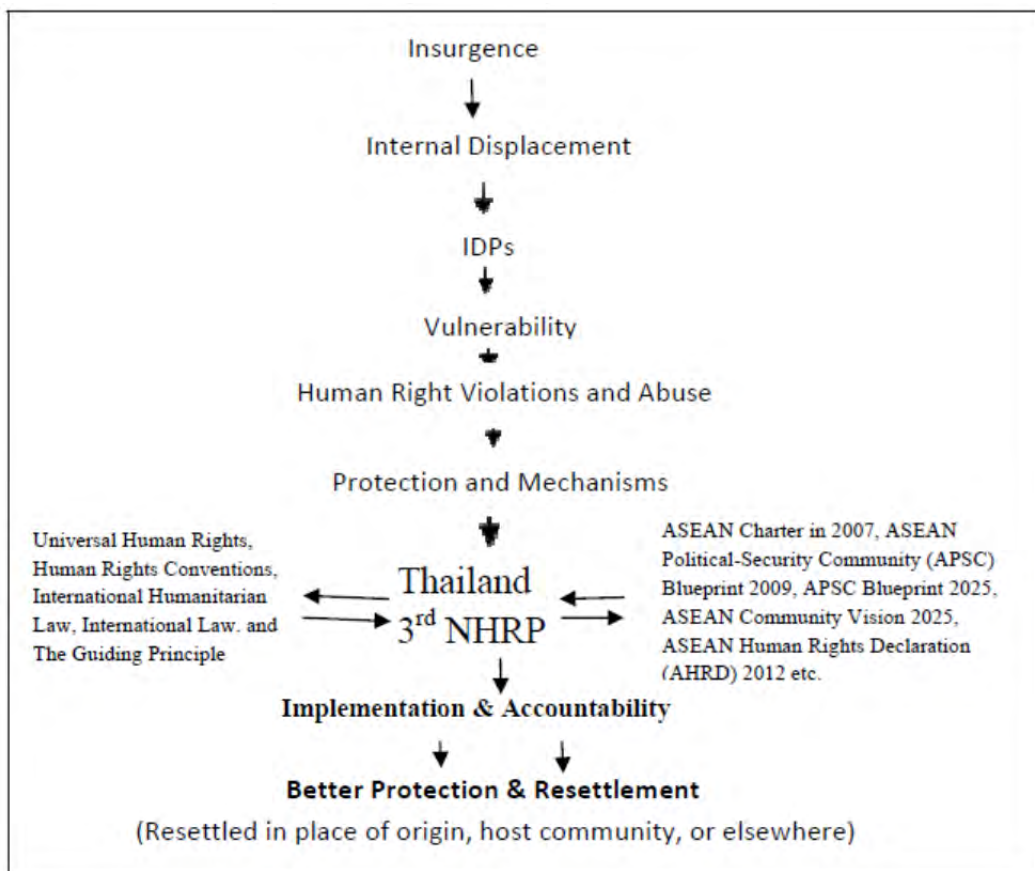
III. Conceptual framework

Figure 1. The conceptual framework of the study

As illustrated in figure 1. above, the conceptual framework of the study is designed to explain how Thailand 3rd NHRP strengthens the protection of refuges as enshrined. Often a times, human rights violations are strongly linked to the cause of insurgency, terrorism, and violent conflicts from around the world, which often leave scores displaced. When people are displaced, their level of vulnerability increases. And this constitute a major reason why adequate protection mechanisms that uphold the basic human rights of the IDPs is required at national, regional and international level to help victims overcome such vulnerability.

At the national level, Thailand has the 3rd NHRP and the 2007 national constitution (as amended) among the key human rights instruments that enhance IDPs protection. At regional level, ASEAN Charter in 2007, ASEAN Political-Security Community (APSC) Blueprint 2009, APSC Blueprint 2025, ASEAN Community Vision 2025, ASEAN Human Rights Declaration (AHRD) 2012 etc., *(*Kliem, 2019) remain among other key instruments filled any local voids. While at the international level, the Universal human hights, human rights conventions, international humanitarian law, international law, Kampala declaration and the Guiding Principle filled any gaps created locally and regionally. But just having a national human rights action plan without political will to implement it makes IDPs even more vulnerable in Thailand. However, in any cases where best practices and matched with the instruments are carefully woven into the action plan, IDPs are better protected and so are their chances of being resettled in the host community, back to their place of origin, and /or go somewhere else.

IV. Objectives

1. To examine how the right-based architecture of the TNHRP enhances IDPs protection in the south.
2. To create awareness about how the lack of political will, misconceptions in the implementation level creates any existing gaps translates into inequitable development in the deep south that limits the TNHRP from empowering IDPs in accessing their rights

V. Materials and Methods

A. Participants

The 30 participants and four key informants used in the study are teachers, internship students who came from Pattani to serve in Krabi, petty traders with kiosks in front of 7-eleven or the mosques, and servants who serve in the restaurants, sell tour packages for tour companies, or receptionist in the hotels due to their English proficiency skills competitive advantage. They all come from the three major southern conflict-prone provinces of Thailand (Yala, Narathiwat, and Pattani), including one key informant from Songkhla provinces where the spilt over effect of the conflict is occasional felt. The participants who volunteered to participate in the study all have Islamic religious background. Their ages ranged between 18 – 45 years old with over 10 years of relevant experience about the problem and more than 3 months experience in Aeo Nang as IDPs.

B. Data collection

A mixed-method of data collection approaches was used by using a set of closed-response questionnaires and open-response items that is composed of 20 questions used to collect richer data for the study. Both data were carefully designed to strengthen the quality of the research results. As aforementioned, the closed- response items consist of three main parts. The first part was designed to collect demographic data of participants while the second part (a) and (b) consisted of 20 questions used to sample the participants' opinions about how the NHRP enhances IDPs protection in Krabi, including what they think the government should do to stop the trend and improve their condition in Krabi, etc. The closed-response items employed a five-point Likert scale to rate the degree of the participants' perceptions of their protection based on human rights which ranged from strongly agree (5), agree (4), undecided (3), disagree (2), and strongly disagree (1). In trying to overcome any language barriers and time constraint, the questionnaires were translated into Thai and Malay with the help of a teacher from my school, which makes it possible for the participants to fill it in approximately 15 – 20 minutes.

C. Data Analysis

The interpretation of the data from the closed-ended response questions were analyzed using only the percentage values based on descriptive statistics. This is because the values clearly represent the dimension scores of each respondent in the questionnaire clearly. In addition, open and axial coding method (Strauss and Corbin, 1990) were employed in the qualitative data analysis process to identify any new and existing phenomenon to categorize each theme into dimensions for clarity.

VI. Findings

The 3rd National Human Right Plan is consistent with international law, human rights and humanitarian international laws and it is holistic enough to provide adequate protection to IDPs, despite Thailand not ratifying the UN Convention on Refugees. However, implementation remains a big problem. Thus, majority of the participants attributed the push factors for their relocation to Krabi as a result of the negative impacts of the sustained insurgency that has destroyed their livelihood, limit their chances to a livelihood change due to lack of opportunities and the insecurity in the region thereby seeing themselves as IDPs who should have been assisted by the government. They all blamed the government for lack of development projects, poor economic performance and infrastructure in the region, though acknowledging the role of the conflict as an impediment to such development. According to Nong. Nadia "despite the instability at home, we all strongly desire to return home someday and reunite with our families because that is where we can truly feel at home".

Contrary to the UN Global Compact principles on Human Rights (principles 1 and 2) that emphasizes fair work and fair wages for all, it was also discovered in the study that over 90 percent of the IDPs are women because of the lack of jobs and poor wages for women in the deep south. According to the respondents, lack of vocational skills due to poor education and its complete lack accounted for why women, especially the older generations cannot find jobs at home. The respondents also asserted that even men with vocational skills hardly find jobs that can pay them well enough to sustain their families, thereby forcing them to flee to other provinces in Thailand.

In addition, another respondent from Pattani whose identity will not be disclosed due to privacy reasons maintained that "except for the few motorcycle accidents cases some of our people face here due to drunk tourists, we don't have serious rights violation cases in Krabi. However. we all long for the day when we return home when the Thai Government will create an equitable sustainable development pattern in the region that guarantees our future, dreams, and aspiration to lead a free and independent life as Thais with a better home where our religious rights as Muslim and Malay cultural identity is respected within the Thai national culture".

Also, another key finding in the study is the huge cloud of misconceptions about what constitute IDPs status in Thai Law in a country that has yet to ratify the UN convention on refugees or recognized refugees' status. Such misconceptions about what exactly constitutes human rights and their violations in Thai is not new and contributed to the lack of political will which accounts for the poor implementation of the HRP to enhance the protection of IDPs at the policy level even though it is a state party that has ratified the convention on the declaration of the universal human rights. And by implication, it also compounded their situation and accounts for the main reason why they (including the disables persons among them) are not receiving any desired recognition, let alone support from the government or NGOs, despite the fact that Thailand has ratified the convention on the rights of persons with disability.

According to another the key informants (a teacher with over ten years' experience) only known as Khun. Asuanee, "the restrictions on Islamic teachers career growth path in the deep south contributed to why I flee to as IDPs". According her, those who seek to advance their knowledge by taking advance training in Islamic studies as teachers are not given the chance to do so. Those from rich homes must go to the middle east to do so.

On the contrary, the lack of protection mechanism makes the host communities to see them as internal economic migrants who have fled the conflict to seek greener pastures in Krabi, though acknowledging their status as IDPs, which makes them to be very generous towards them. So far, aside language barriers, the locals do not have any major problems dealing with them, especially as most of them reside within Muslim dominated areas due to occasional language barriers (by those who cannot speak, read, or write Thai) and religious identity links.

Furthermore, unlike the Thais diaspora IDPs in the north whose lack of citizenship, ID or travel documents compounded their difficulties, the Southern IDPs have their documents but some cannot access health care in Krabi because of the health care system that restrict them to receive free health care in their registered locations or pay when away.

VII. Discussion, Conclusion and Recommendations

A. Discussion

At the policy formulation level, the consultative and participatory framework adopted in the formulation of the key elements of the 3rd National Human Rights Plan makes it very comprehensive in covering most of the national and international legal frameworks and mechanisms that enhance the protection of minorities and IDPs and meets international standard. This is also acknowledged by Pol.Gen. Chatchawal Suksomjit, Permanent Secretary for Justice in December 2014.

The relevance of aligning such national human rights action plan with international law and international humanitarian law in enhancing the protection of IDPs cannot be overemphasized. For example, (1) both define clearly the obligations of the state and state the limits to the kind of actions that the state must indulge in to meet such obligations, (2) enhance the operational capacity of the state to prevent, mitigate and respond to humanitarian crises, using rights-based

approaches (RBA) that puts the people and the community at the center by also enhancing the capacity of the individuals to protect themselves, (3) serve as a basis to promote effective advocacy, awareness campaigns, grassroots capacity-building and activism as well as regulates the individuals' conducts, exchanges, and actions within the purview of law.

As aforementioned, these intrinsically and instrumentally empowers and reinforces the legal instruments highly needed to protect IDPs such as guiding principle (Thailand 3rd NHRP Target 1, 13, and 14) and the recent global compact on migration (Thailand 3rd NHRP Dimension 3, 5, and 11; and Target 6,7,11, and15).

Aside the enhancement of protection of IDPs, the implementation of such right based approach to development should also help to address the cause of the lingering internal displacement of the minority population (GA resolution 48/134 endorsing the Paris Principles), especially in the south of Thailand. Nonetheless, National security reasons technical reasons for the misconceptions and negligence at the implementation level, and or perhaps, respect for the key instruments of the NHRP. This will only aggravate human rights situation and leave a cloud of hopelessness and ill-confidence on even proponents and opponents of human rights in Thailand alike, including the IDPs.

Also, if serious measures are not put in place improve the situation, Islamic extremists can exploit their vulnerability to use them as targets to access to the majority of the western tourists who dominate the tourism business in Aeo Nang just to cause panic and destroy the booming tourism business. This will imply a replication of the Bangkok, Hatyai, and Trang experiences, which will also give rise to renewed distrust and further violence that will trigger human rights violations and abuses that could stripe the IDPs off the little protection and peace they enjoy in their host communities across Thailand.

B. Recommendations

Although the 3rd National Human Right Plan is holistic enough to provide adequate protection to IDPs, there is a cogent need for consistency in the definition of IDPs and the implementation of the NHRP, especially in the assessment of the scope of internal displacement based on to ensure that no IDP group in Thailand is overlooked, ignored or marginalized, irrespective of the mitigating factors, patterns, and background of the IDPs.

The central government should liaise with the centers for disaster mitigations at the provincial level to broaden humanitarian assessments to include the Southern Muslim displacement as a potential factor of vulnerability by eradicating any sociopolitical, policies or legislative myths and misconceptions that exclude certain groups of IDPs indiscriminately.

Thailand should also ensure that the International standards' popularity the NHRP enjoys is a clarion call for the nation to scale up the implementation of the action plan to meet international standards needed to unequivocally enhance the protection the rights of internally displaced persons across the nation because human rights are universal and unalienable.

As IDPs seek to return to their region, the government should initiate a program to identify those who wants to return home. Such initiative must emphasize the importance of voluntary and safe return, as well as the need to assist the displaced to recover their properties, retrain them to acquire new skills that will land them better jobs, including attracting investors as well as encouraging the development of key infrastructure that will boost job creation in the region so that the IDPs can return home to lead a more fulling life.

Finally, the government should provide the IDPs in Krabi with an independent platform for them to air their voice to articulate their grievances in the public as part of their right as enshrined in the 3rd NHRP. These recommendations among others raised in this paper, will help to stop fueling the conflict in the deep south or mitigating it, and enhance the protection of IDPs both in the interim and in the long run.

C. Conclusion

In conclusion, despite the inconsistencies and misconceptions that are responsible for the poor implementation of the 3rd National Human Right Plan, which hinders its effectiveness to a great extent, its holistic framework and rich human rights treaties' architecture and strong root in upholding the principles of international law and international humanitarian law makes is in itself enough instruments to enhance IDPs protection, and for human rights activists, the international community, and NGOs to hold the government of Thailand accountable for any violations and abuse against IDPs. Therefore, now that Thailand has a democratically elected government that should respect human rights, any implemented harsh laws or decrees that infringe on the people human rights and contribute to further violence in the South should be addressed or suspended to avoid more people getting displaced. And although the inclusive dimensions of the NHRP enhances IDPs protection, lack of awareness creation about how the lack of political will, misconceptions, and existing gaps in the inequitable development in the deep south limits the NHRP from empowering the IDPs in accessing their rights implies that public optimism on benefits of the TNHRP remains a blank check, and prophetic alternance, rather than a call for action and obligation to sustainably address the issues of IDPs in Thailand.

VIII.   Acknowledgment

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APPENDIXES

Appendix A.   Research Questionnaire

N0. (ลำดับ ที่)	Research Question (คำถามการวิจัย)	Responses from respondents (ระดับความคิดเห็น)				
		5	**4**	**3**	**2**	**1**
	Section A. Put a check on the correct column (**ส่วนที่ 1.** ใส่เครื่องหมาย √ ลงในช่องที่ตรงกับคำตอบที่สุด)	**Strongly Agree (เห็นด้วยมาก)**	**Agree (เห็นด้วย)**	**Undecided (ปานกลาง)**	**Disagree (ไม่เห็นด้วย)**	**Strongly disagree (ไม่เห็นด้วยมาก)**
1.	I don't face any kind of discrimination due to my ethnic and religious minority identity here in Krabi? (ฉันไม่ต้องเผชิญกับการเลือกปฏิบัติใด ๆ อันเนื่องมาจากอัตลักษณ์ทางชาติพันธุ์และศาสนาของฉันที่กระบี่)					
2.	IDPs with disability receive support from the government or agencies in Krabi? (การจัดทำแผนพัฒนารายบุคคลที่มีความพิการได้รับการสนับสนุนจากรัฐบาลหรือหน่วยงานในจังหวัดกระบี่หรือไม่)					
3.	I don't suffer gender related discrimination due to my religious principles here in Krabi? (ฉันไม่ประสบปัญหาการเลือกปฏิบัติทางเพศเนื่องจากหลักการทางศาสนาของฉันที่กระบี่)					
4.	I enjoy full legal and social protection while working in Krabi? (ฉันได้รับความคุ้มครองทางกฎหมายและทางสังคมอย่างเต็มที่ขณะทำงานในกระบี่)					
5.	I can reunite with my family members if I choose to do so. (ฉันสามารถรวมตัวกับสมาชิกในครอบครัวของฉันได้เมื่อฉันมีความประสงค์)					

6.	I have access to mechanisms for property restitution or compensation regardless irrespective of whether I return to my community, settle in the area where I find refuge or a new location? (ฉันสามารถเข้าถึงการบริการเพื่อการชดเชยและการชดใช้ค่าเสียหายโดยไม่คำนึงถึงการย้ายที่อยู่หรือถิ่นฐานใหม่)					
7.	I enjoy full and non-discriminatory access to national and sub-national protection mechanisms, including police and courts here in Krabi. (ฉันเข้าถึงกลไกการคุ้มครองระดับชาติและระดับภูมิภาคอย่างเต็มที่และไม่เลือกปฏิบัติรวมถึงตำรวจและศาลในกระบี่)					
8.	I am not subjected to discrimination for reasons related to my displacement status. (ฉันไม่ได้ถูกเลือกปฏิบัติด้วยเหตุผลที่เกี่ยวข้องกับสถานะการย้ายถิ่นฐานของฉัน)					
9.	I don't suffer attacks, harassment, intimidation, persecution or any other form of punitive action upon return to my home communities? (ฉันไม่ประสบปัญหาเกี่ยวกับการถูกโจมตี,การคุกคาม,การข่มขู่,การกดขี่ข่มเหงหรือการลงโทษรูปแบบอื่นๆ เมื่อกลับมาที่ภูมิลำเนา)					

Section B. Please answer yes or no, or leave comments where you deem fit. (ส่วนที่ 2. เลือกตอบคำถาม ใช่/ไม่ใช่/ หรือแสดงความคิดเห็นตามความเหมาะสม)	Yes (ใช่)	No (ไม่ใช่)	Please leave your comments here (ข้อเสนอแนะ)
10. Do you have access to your personal documentation, which typically is needed to access public services, to vote and for administrative purposes? (คุณมีสิทธิ์เข้าถึงเอกสารส่วนตัวซึ่งมีจำเป็นเพื่อเข้าถึงบริการสาธารณะ เพื่อลงคะแนนและเพื่อจุดประสงค์ด้านการบริหารหรือไม่?)			
11. Do you live with your family members (husband/children/parents) here in Krabi? (คุณอาศัยอยู่กับสมาชิกในครอบครัวในกระบี่หรือไม่?(สามีภรรยาบุตร//บิดามารดา?)			
12. Do you experience any barriers related to your displacement status that bar you from using services that are available to other residents of the community where you live in Krabi?(คุณประสบปัญหาหรืออุปสรรคใดๆที่เกี่ยวข้องกับสถานะการย้ายถิ่นฐานที่ขัดขวางไม่ให้คุณใช้บริการสำหรับผู้พักอาศัยในชุมชนที่คุณอาศัยอยู่ในจังหวัดกระบี่หรือไม่?)			
13. Do you experience any barriers to employment and income generation opportunities that relate specifically to your displacement status in Krabi? What is it? (คุณประสบปัญหาอุปสรรคใดๆในการจ้างงานและโอกาสทางรายได้ที่เกี่ยวกับการย้ายถิ่นฐานของคุณในกระบี่หรือไม่?)			
14. Do you have information on the whereabouts of your other family members?(คุณมีข้อมูลเกี่ยวกับที่อยู่ของสมาชิกครอบครัวคนอื่น ๆ หรือไม่?)			
15. Are you able to exercise the right to participate fully and equally in public affairs and discussions in your			

	communities in Krabi? (คุณสามารถใช้สิทธิในการมีส่วนร่วมอย่างเต็มที่และเท่าเทียมกันในกิจกรรมสาธารณะและการอภิปรายในชุมชนของคุณในกระบี่หรือไม่?)			
16.	Do you enjoy any kind of economic security initiatives to help you improve your livelihoods, in form of small grants so that you have what you need to earn a living? Why, why not? (คุณเข้าร่วมกับโครงการความมั่นคงทางเศรษฐกิจใด ๆ ที่จะช่วยให้คุณปรับวิถีชีวิตในรูปแบบของเงินช่วยเหลือหรือการบริจาคต่างๆเพื่อให้เพียงพอต่อการหาเลี้ยงชีพหรือไม่? หากไม่อย่างไร?)			
17.	Are you satisfied with the conditions of shelter, hygiene, health, safety and nutrition where you live now in Krabi?(คุณมีความพึงพอใจกับสภาพที่พักอาศัย สุขอนามัย สุขภาพ ความปลอดภัยและโภชนาการที่คุณอาศัยอยู่ในกระบี่หรือไม่?)			
18.	Where are you from in the deep south? And why did you move to Krabi? (คุณมาจากทางใต้สุดหรือไม่? ทำไมจึงย้ายมากระบี่?)			
19.	Is there any problem you face as IDPs here that is linked to your status that is not covered in this questionnaire? (คุณมีปัญหาเกี่ยวกับแผนการพัฒนารายบุคคลที่เกี่ยวเนื่องกับสถานะของคุณอื่นๆอีกหรือไม่?)			
20.	Would you prefer to go back to your provinces if you have a chance to a better life there? (คุณมีความพึงพอใจที่จะกลับไปยังจังหวัดของคุณหากมีโอกาสที่ดีขึ้นหรือไม่?)			

Immigration, Unemployment, and Economic Growth in the Host Country:

A bounds cointegration testing and ARDL models for Thailand

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Abstract

Increased immigration in Thailand over the past two decades has inevitably affected the country's labor market. Immigration increases the labor supply in the migrant-receiving economy. It also increases public concerns that immigrants may compete with native workers for the existing jobs or take jobs away from natives, reduce employment opportunities for domestic employees, and depress wage rates in the host country's labor market. To determine whether a change in a single variable can also cause a change in, or can help to predict, another variable is the purpose of most empirical studies in economics and other social sciences. This article explores the nature of causal relation between immigration and the two selected economic variables: unemployment and economic growth in Thailand. The article also provides an overview and underlying theoretical framework for immigration, highlighting the labor market effects of immigration. To identify the causal relationship, Autoregressive Distributed Lag (ARDL) bounds cointegration testing and Granger causality tests are employed using quarterly time-series data in the period 2007-2018. The analysis of the ARDL bounds cointegration test reveals that there is a relationship among the variables of immigration, unemployment, and economic growth in the long-run. The Granger causality tests also confirm the presence of a long-run, unidirectional causality, where the increase in economic growth measured by GDP per capita pulls in migrant workers. Furthermore, the evidence does not support the hypothesis that immigration in the host country causes unemployment, and thus migrant workers do not crowd out native employment. However, the results suggest that unemployment due to factors such as demographic changes and job characteristics attracts immigration.

Keywords: Immigration, Unemployment, Economic growth, Autoregressive Distributed Lag, Granger causality

1. Introduction

Like in some countries, Thailand is considered to be one of the newly emerging and developing economies and has been faced with the big challenges of an aging population in recent years.

Declining fertility rates accompanied by demographic transitions have led to a reduction in the workforce in Thailand, resulting in a risk of labor shortage in the forthcoming years. This will have serious implications not only for the sustainability of economic development, but also for labor market equilibrium, where employers in different industries will have to replace local or native workers with persons of foreign origin. This perception has made Thailand become a major immigrant destination in the region, attracting mostly immigrants from less economically developed neighboring countries. Nevertheless, the immigrant inflows into Thailand over the past two decades have made labor migration and policy related to immigration a major public issue in the country. This large-scale immigration within a short time period has overwhelming social as well as economic consequences, especially in Thai people's perception of immigrants. They are concerned that immigrants may compete with natives for existing jobs, depress wage rates in an already low-wage labor market, reduce employment opportunities of domestic employees, and also financially burden governments from their use of common-pool resources and several other social service programs.

Accordingly, it is necessary to assess the impact of the inflow of migrant workers on the host country to provide the information and evidence that assists policymakers in designing appropriate immigration policies. Although the international movement of labor which plays a role in both the sending and host economies is well researched, only a few empirical studies exist in the literature, particularly in the context of Thailand. This study thus aims to address this gap through examining the dynamic links between the variables of immigration and the two macroeconomic variables, economic growth and unemployment, by adopting an Autoregressive Distributed Lag (ARDL) bounds cointegration test and Granger causality tests based on Thai time series data in the quarterly period 2007–2018.

The remainder of this article is organized as follows. Section 2 introduces a brief overview regarding immigration in Thailand. Section 3 presents an underlying theoretical framework for immigration and its effects towards the host country labor market. Section 4 reviews some of the literatures regarding the impacts of immigration on the migrant-receiving economies. Data, methodology, and the obtained findings are explained in Section 5, while the last section provides discussion and emerging policy implications.

2. Immigration in Thailand

Thailand has been a labor-importing country since the 1990s after the country's structural transformation from an agricultural to an industrial based. Nowadays, more than two million of the population are immigrants, mainly from neighboring countries in Southeast Asia such as Myanmar, Cambodia, and Lao PDR. This cross-border immigration influx is mainly based on the growing economy with labor demand from the expanding industrial sector, the relatively high income, and

widening wage disparities between Thailand and its neighbors (Paitoonpong and Chalamwong, 2012). Moreover, the greater demands for migrant workers and changes in migration policy to be more active and integrated are the results of the retirement of the large baby-boomer groups. During the last ten years in particular, the number of immigrants has increased, now exceeding by more than one-third the population of 1,553,951 in 2009 to 2,131,501 individuals by the end of 2018, a 37.2% growth rate. However, of this group, there are also highly-skilled immigrants from several developed economies, such as Japan, UK, USA, and other European countries, as a means of foreign investment. Appendix A shows the number of immigrants from major countries in Thailand.

In Thailand, the value of particularly low-skilled immigrants – both regular and irregular – is often viewed as a flexible and cheap labor, taking up jobs that are shunned by natives who have turned to jobs offering higher wages and better working conditions. According to Athukorala, Manning and Wickramsekara (2000), a labor shortage has been predicted in various industries in Thailand in the next few years. It has been argued that immigrant workers have, in some cases, prolonged the Thai industries' life which were previously under the threat of extinction owing to labor shortages and/or high labor costs. There has been particular need for migrant workers in the sectors of agriculture, fishery and seafood processing, construction, and household services/domestic work.

The increase in immigration since the 2000s has been increasingly accompanied by public attitudes towards immigrants as a threat to Thai economic and social well-being. According to a survey carried out by ILO in 2011, unemployment was the main disadvantage of immigration. This was mainly owing to the period of global economic downturn experienced as a result of the sub-prime crisis during 2007-2008, which was accompanied by a high unemployment rate (Jitsuchon and Sussangkarn, 2009). The ILO study also showed that approximately 80 percent of Thai people felt that immigrants are more likely to commit a large number of crimes (ILO, 2011). However, a study carried out between 1998 and 2001 by Sirikarnjana (cited in Paitoonpong, 2012) found that immigrants were actually unlikely to commit different crimes than natives.

In contrast, the presence of immigrant workers was proven to have significant benefits for the Thai economy. The benefits of immigration are evident in some particular sectors, such as agriculture, fishery, construction, and domestic work, where Thai natives are reluctant to work in unpleasant conditions for minimum earnings. To the extent that the relatively low wages and the social safety net in the labor market have led to these job vacancies being filled by migrant workers, some of the instant advantages to the Thai economy, such as price and cost competitiveness, will decrease if migrant workers are contingent on the same standards or incentives as natives. This can explain why the theoretically strong regulations against the employment of irregular foreign workers

are never seriously enforced. However, in the long term, as even irregular migrant workers become more integrated into Thai society, it will no longer be possible to maintain the differential treatment of migrant and native workers. Even so, the net effects of immigration may still be positive, particularly when it comes to the need to expand employment in the labor market owing to an increase in product demand.

3. Theoretical Framework

The impacts of foreign workers on labor market in the host economy can be considered from two different angles: supply-side and demand-side.

3.1. Supply-Side Effect: Substitute Inputs Case

When foreign workers and natives are perfect substitute inputs, or in other words, when they acquire the same kinds of skills, they compete for the same kinds of jobs. Figure 1 (a) illustrates the effects of migrant workers on this labor market. Assume that the curve of labor supply (S_1) for native workers is in upward-sloping, and when foreign workers enter the labor market, the line shifts rightward to S_2, increasing total employment from L_1 to L_2. Further assume that the demand for labor as shown by the line D_1 is fixed: whether or not there is an entry of foreign-born workers, the market wage rate will fall from W_1 to W_2 and the new equilibrium point is at E_2. Note that natives are not eager to perform their jobs at this lower market wage, and the employment rate will fall from L_1 to L_3 and be displaced by immigrants. In a sense, foreign workers "take jobs away" from some natives by depressing the market income and convincing them that it is no longer profitable to work.

However, it is clearly an empirical concern that the magnitude of wage reduction and job displacement impact depends on the magnitude of the slope of the relative demand and supply for labor as well as immigration flows. As long as the capital is fixed and the demand curve is downward-sloping, an increase in immigrants will move the supply curve down, reducing the market wage and native employment.

Figure 1 Supply-Side Effect of Immigrant workers
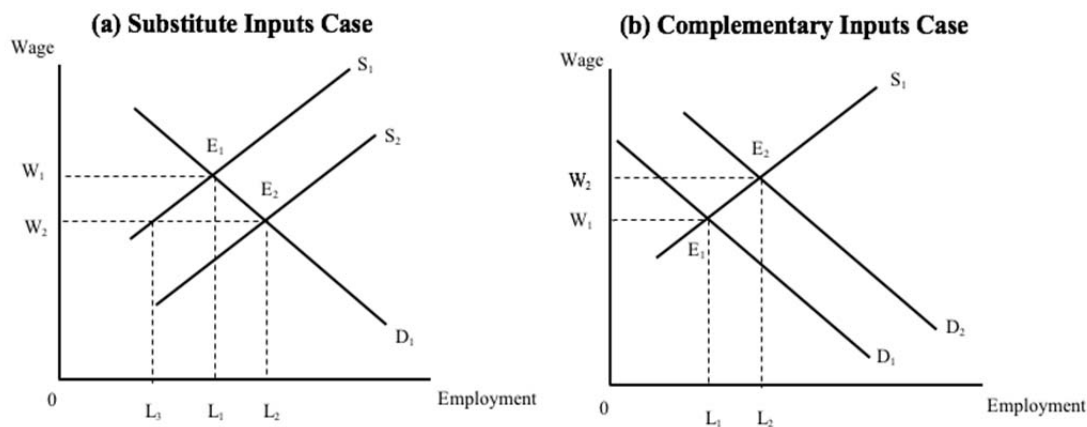
3.2. Supply-Side Effect: Complementary inputs case

On the other side, it is possible that migrant and native workers have different kinds of skills and perform in different types of jobs. To illustrate, migrant workers may be employed in particular sectors such as labor-intensive agricultural production and manufacturing. This frees up the more skilled domestic employees to work in different jobs or perform tasks that allow immigrants to make better use of their human capital and skills. The overall productivity of native workers may increase owing to the presence of immigrants because they can now work in specialized jobs that better suit to their skills. Thus, immigrants and natives are complementary to each other in the labor market.

In the case that the labor inputs are complements, the flow of immigration can increase earnings for native-born workers. Immigration can enhance job opportunities in general if there are shortages of skills in the migrant-receiving country and migrant workers help to relieve these bottlenecks, leading to a greater demand for labor and eventually resulting in an increase in native wages. In this case, foreign workers and natives are complements in production, and they are separately engaged in two distinct labor markets. When two inputs are complements, an immigration flow causes the demand curve for its complement given by native workers to shift up from D_1 to D_2, increasing the native workers' productivity, as shown in Figure 1(b). This will lead to an increased market wage rate from W_1 to W_2. Also, some native workers who previously did not find it worthwhile to work now see the higher wage rate as an incentive to re-enter the labor market, and therefore the employment of natives rises from L_1 to L_2.

3.3. Demand Side Effects

On the other hand, foreign workers not only supply additional workforce but also demand products and services, generate consumption expenditure, and thus the inflow of migrant workers has effects on both the supply- and demand-side in the labor market. As for the demand-side effects,

product demand is assumed to be fixed. Immigrants' consumption expenditure then shifts the demand curve to the right. This will then, in turn, lead to an expansion in labor demand and hence a rise in the overall wage rate. Therefore, when there are effects from both demand- and supply-side, the net effect on the labour market depends upon the employment opportunities of foreign workers and their marginal propensity to spend relative to native-born workers. For instance, when the consumption expenditure of immigrants is relatively lower than their job employment, this causes the rightward shift in the labor demand curve but to a lesser degree than the supply curve for labor, and hence will cause some native workers to lose their jobs. Nevertheless, the present study attempts to address only the substitute and complementary issues of the supply-side effects by ignoring the demand-side effects.

3.4. Immigration and Unemployment

When discussing the causal link between immigration and unemployment, one must take into consideration two important questions. The first question is: does an increasing number of immigrants cause an increase in unemployment rate in the host country? The answer is ambiguous but can be explained by the labor market effects of immigration as discussed in the above framework. At one extreme is the claim that there is a specific number of job positions in the labor market, and if one of those jobs is taken by a migrant worker, then that work is no longer available for a native worker. Therefore, the employment of immigrants reduces the employment opportunities of natives on a one-for-one basis. This demonstrates the way in which some people see immigrants and native workers as substitute inputs. However, at the other extreme, some people see immigrants and natives as complementary inputs. They contend that migrant workers only accept the jobs that natives are unwilling or reluctant to perform and therefore do not take job opportunities away from natives. The second question is: does a decrease in the unemployment rate in the migrant-receiving country lead to an increase in the inflow of migrant workers? Two researchers, conducting survey studies from different countries in different periods of time, found that the labor force market and economic circumstances in the country of destination affect the intentional inflow of migration, unless other factors intervene; for example, a lower unemployment rate in the receiving country may cause higher migration inflow (Whiter and Pope, 1993). Moreover, it is possible that the causal relationship between immigration and unemployment can be either uni- or bi-directional, and therefore there is a need to study for their causality.

In light of the above theoretical underpinnings, the present study aims to examine two hypotheses. The first states that immigration causes increased economic growth measured by per capita GDP. The second assumes that natives and migrant workers are complements in the labor market, and that immigration will not lead to unemployment nor decreased wage rates in the receiving economy.

4. Literature Review

A summary of empirical findings in the previous literature, highlighting the impact of immigration and the relation between the variables of immigration, unemployment, and economic growth, are provided in this section. In many existing studies of migration, one of the key interests has been its costs and benefits for migrant-receiving economies. For instance, Altonji and Card (1991) investigated the U.S. cities' data for the period 1970-1980 to investigate the impact of immigrants on low-skilled native employment. Only little evidence that migrant workers led to a large effect on the unemployment rate of less skilled natives can be found.

The nature of causal relation between the variables of immigration and unemployment in Australia was studied using quarterly data between 1948 and 1982 (Withers and Pope, 1985). By applying structural disequilibrium models and Granger causality tests, the researchers used twelve lags to run on the quarterly data, and the estimated results revealed that immigration did not cause unemployment rate; however, the unemployment rate did cause immigration. They then concluded that structural unemployment was not significantly affected by immigration; however, immigrants created at least as many jobs as they filled. In a different study, Pope and Withers (1993) further studied the annual Australian data on immigration and unemployment in the period from 1861 to 1991. They again applied structural disequilibrium models and statistical causality techniques and found that only unemployment leads to immigration, and not vice-versa. Evidence also suggested that there are structural breaks in this linkage, which derived from Australian government policy changes.

Gross (1997) tested the ability to absorb the increasing immigrant inflows of a regional labor market in British Columbia. Using Canadian data, he found that there was a positive relation between immigration and unemployment in the short run, and a negative relationship in the long run. He also found that increasing flows of immigrants were associated with declining skill levels in times of high unemployment, and in the short run, migrant workers who had higher than average levels of skill tended to be more competitive. In similar vein, Konya (2000) used quarterly Australian data from 1983 to 1998 and analyzed the Granger causality test between immigrants and unemployment rate. She found that immigration negatively and uni-directional caused unemployment in the long run, both with seasonally adjusted and unadjusted data. Morley (2006) studied the relation between immigration and economic growth in the United States, Canada, and Australia, using ARDL bounds model for cointegration approach. The results show the existence of long-term unidirectional causality from GDP per capita to immigration, still there is no evidence in the opposite direction.

In Thailand, the past literature has shown that the inflow of migrant workers contributes to a net positive impact on the host economy, and also slightly depresses wage rates in certain jobs. For

instance, Sussangkarn (1996), using a computable general equilibrium (CGE) model, found that the migration flow raises about 0.55% of Thai GDP, or approximately $839 million in 1995. This CGE model was later updated by Martin (2007), who also found that immigrants, which was around 5% of the total Thai workforce, enhanced GDP by around 1.25% in 2005. Lathapipat (2010) suggested that immigration, particularly in the border areas, reduces wage rates of less-skilled natives, but increases wage rates of highly-skilled natives in Thailand. In a different study, Pholphirul and Kamlai (2014) found that the presence of migrant workers in the agricultural sector depresses wage rates and decreases total employment in the same sector by around 4.34% and 0.67% respectively. In a more recent study, Panthamit (2017) investigated the impact of immigrants on unemployment in Thailand adopting time-series data for the quarterly period from 1999 to 2013. By applying an ARDL approach, the findings showed that immigration caused the unemployment in the short run, and reduced the unemployment rate in the long run.

Although there are several studies on immigration in Thailand, they do not suggest any obvious effect of immigrant workers on the labor market or vice versa. Bearing this in mind, the present study will try to examine any causal relation and make an inference in regard to the immigration impact in the short- and long-run dynamics and the selected macroeconomic indicators of unemployment and economic growth in Thailand.

5. Data, Methodology, and Empirical Results

In the present study, 12-year quarterly time series data from Thailand spanning the period 2007-2018 has been used. All data are converted into logarithmic form in order to validate econometric testing approaches, and to achieve mean-reverting relationships. Data on immigration, denoted by lnIMM, was obtained from the Foreign Workers Administration Office and calculated by the percentage of the overall migrant workers by the total population. Data on unemployment, denoted by lnUNEMP, was obtained from the Thai Labor Force Survey of the National Statistical Office of Thailand and calculated as the percentage of the total labor force that is working part- or full-time, or not working but available and actively seeking employment, at ages 15-60. GDP per capita, denoted by lnGDP, refers to GDP divided by midyear population, and was obtained from the Office of the National Economic and Social Development Board of Thailand.

The descriptive statistics of the logarithmic forms of the three main indicators are illustrated in Appendix B. The skewness and kurtosis measures were examined for the distribution of the data sets and evidence of a normal distribution among all variables was found. In addition, Appendix C presents the correlation matrices for the first differences of all data series. The estimations of simple correlations indicate no evidence of correlation.

This study uses the ARDL-bounds method of cointegration, which has not been previously employed in examining the causal relation between immigration and the variables of unemployment and economic growth in Thailand.

5.1. Unit root tests

To perform the ARDL-bounds cointegration testing, the first necessary condition is to examine that the selected indicators are stationary at level, as the estimated result might be spurious when the data series have non-stationary status. Even though the ARDL bounds cointegration testing is applicable regardless of whether all data series are integrated at an order of purely I(0), purely I(1), or mutually cointegrated (Pesaran, Shin, and Smith, 2001), it is indispensable for this study to ensure that the integration degree of each data series is not integrated at an order of I(2) or more. Therefore, the Augmented Dickey-Fuller (ADF), Phillips-Perron (PP), and Dickey-Fuller GLS (DF-GLS) unit root tests are employed in order to identify the degree of integration or the stationary status. Table 1 displays the results of unit root test for stationarity, where these three tests are conducted on the level of each variable at first, and then on its first difference.

Table 1 Unit root test for stationarity

Variables	lag	Augmented Dickey Fuller Test		Phillip Peron Test		Dickey Fuller-GLS Test	
		With Trend	Without Trend	With Trend	Without Trend	With Trend	Without Trend
lnIMM	1	-3.938** (0.01)	-2.057 (0.26)	-5.189*** (0.00)	-3.460** (0.01)	-1.959 (lag 2)	0.942 (lag 3)
ΔlnIMM	1	-7.103*** (0.00)	-7.192*** (0.00)	-8.156*** (0.00)	-8.295*** (0.00)	-2.278 (lag 3)	-1.020 (lag 3)
lnUNEMP	3	-0.877 (0.96)	-1.244 (0.65)	-2.383 (0.39)	-2.516 (0.11)	-1.160 (lag 2)	-0.988 (lag 2)
ΔlnUNEMP	3	-3.637** (0.03)	-3.407** (0.01)	-8.723*** (0.00)	-8.563*** (0.00)	-7.824*** (lag 1)	-7.718*** (lag 1)
lnGDP	4	-3.776** (0.02)	-0.062 (0.95)	-5.675*** (0.00)	-1.368 (0.60)	-2.518 (lag 4)	0.422 (lag 4)
ΔlnGDP	4	-3.117 (0.10)	-3.108** (0.03)	-8.199*** (0.00)	-8.386*** (0.00)	-2.237 (lag 3)	-0.916 (lag 3)

Note: *, **, *** indicate significance at critical value of 10%, 5%, and 1%

Source: Author's calculation

The findings of the DF-GLS, PP, and ADF unit root tests in Table 1 demonstrate that all the variables are stationary and found to be integrated at an order of I(0) and purely I(1), where the order

of integration on unemployment is I(1) while the immigration and GDP per capita are either I(0) or I(1). However, Perron (1989) suggested that these three tests are considered to have low ability or power in examining the time series data with the existence of structural breaks. To circumvent this concern, the Zivot and Andrews (ZA) unit root test for one structural break was then employed.

5.2. Zivot and Andrews (ZA) test for unit root with one structural break

Following the ZA unit root test methodology, all three models from equations (1) to (3) were estimated for each series and compute the t-statistics for testing. The ZA test for unit root with structural breaks results are presented in Table 2.

Table 2 Zivot and Andrews Test for Unit Root

Variables	Zivot and Andrews Test (One Structural Break)			Results
	k	DU	T_b	
lnIMM	0	-6.653***	2012q2	I(0)/I(1)
ΔlnIMM	1	-7.579***	2012q2	
lnUNEMP	2	-4.155	2011q1	I(1)
ΔlnUNEMP	1	-9.211***	2012q1	
lnGDP	2	-4.759	2009q4	I(1)
ΔlnGDP	2	-9.966***	2009q3	

Note: Critical Value for Zivot and Andrews Unit Root Test: [10%: -4.82]; [5%: -5.08]; [1%: -5.57]

*, **, *** indicate significance at critical value of 10%, 5%, and 1%

Source: Author's calculation

The corresponding structural break-dates for each data series (T_b) is illustrated in the fourth column of Table 2. It can be noticed that the structural breaks for each variable have some noteworthy meanings. First, the break-dates for the variables lnIMM and lnUNEMP were found in the period 2011–2012, which covers the period in which Thailand faced sudden severe floods in several regions, leading to economic stagnation in the country. In addition, the break-date for the variable lnGDP occurred in the year 2009, which is related to the consequence of the world financial crisis or subprime mortgage crisis during 2007-2008.

5.3. ARDL Bounds Testing Approach

The ARDL bounds cointegration testing approach is employed in this study to measure the evidence of a long-run relation among the variables of immigration, unemployment, and GDP per capita. Following Philips (2018), there are three possible outcomes of the ARDL-bounds test: (i) all variables are I(1) and cointegrating, suggesting that there is a long-run causation among variables; (ii) all variables are I(0) and stationary, and there is no cointegrating relationship; and (iii) the results are

inconclusive, where it could be a mix of I(0) and I(1) variables, and further testing is required. The charts of ARDL-Bounds Test Statistics are given in Appendix D.

Table 3 ARDL-Bounds Cointegration Testing

Model Specification	Model 1 F(lnIMM/lnUMEMP, lnGDP)	Model 2 F(lnUNEMP/lnIMM, lnGDP)	Model 3 F(lnGDP/lnIMM, lnUNEMP)
Breakpoint	2011/2012	2011/2012	2009
Bounds Test (F-test)	6.355[a]	8.457[a]	0.458[b]
Conclusion	Cointegration	Cointegration	Stationary
Critical values generated by Pesaran et al. (2001)			
Level of Significance	Lower bounds/ I(0)	Upper Bounds/ I(1)	
1%	4.29	5.61	
5%	3.23	4.35	
10%	2.72	3.77	

Note: [a] Cointegrating relationship exists at critical value of 1%

[b] Stationary at critical value of 10%

Source: Author's calculation

As can be noticed in Table 3, the ARDL bounds testing statistics reveal that the null hypothesis of no cointegration in both models 1 and 2 is significantly rejected as the F-statistic values exceed the upper critical bound of I(1) at the 1% level of significance, suggesting that there is a long-term relation among variables. Nevertheless, in model 3, the value of F-statistic is under the lower critical bound of I(0) at the 10% significance level, suggesting that there is no evidence of cointegration.

Once the valid existence of the long-term causation among immigration and the variables of unemployment, and GDP per capita was established, the ARDL method could be applied to estimate both short-term and long-term coefficients. Based on the cointegration tests results (Table 3) among the variables lnIMM, lnUNEMP, and lnGDP, the coefficients of models 1 and 2 were then estimated. Table 4 shows the estimated results. In this study, the following ARDL-bounds models are developed for estimation:

$$\Delta \ln IMM_t = \alpha_0 + \theta_0^* \ln IMM_{t-1} + \theta_1 \ln UNEMP_{t-1} + \theta_2 \ln GDP_{t-1} + \theta_3 dum_{t-1} + \beta_1 \sum_{i=1}^{p} \Delta \ln IMM_{t-i} + \beta_2 \sum_{i=0}^{p} \Delta \ln UNEMP_{t-i} + \beta_3 \sum_{i=0}^{p} \Delta \ln GDP_{t-i} + \varepsilon_t \qquad (1)$$

$$\Delta \ln UNEMP_t = \alpha_0 + \theta_0^* \ln UNEMP_{t-1} + \theta_1 \ln IMM_{t-1} + \theta_2 \ln GDP_{t-1} + \theta_3 dum_{t-1} + \beta_1 \sum_{i=1}^{p} \Delta \ln UNEMP_{t-i} + \alpha_2 \sum_{i=0}^{p} \Delta \ln IMM_{t-i} + \alpha_3 \sum_{i=0}^{p} \Delta \ln GDP_{t-i} + \varepsilon_t \qquad (2)$$

Where α_0 is constant, IMM is immigration, $UNEMP$ is unemployment, GDP is GDP per capita, and ε_t is an i.i.d. error term. The long-term relations among the study variables are denoted by the first part of the equation, while the summation signs in the second part of the equation correspond to the error correction dynamics. The rate of dependent variable adjustment is given by θ_0^*.

Table 4 ARDL Model Estimations

Model 1: F(lnIMM/lnUNEMP, lnGDP), lag selection based on SBC

Dependent variable: ΔlnIMM, 43 observations used for estimation from 2008q1 to 2018q3

Variables	Coefficient	Standard error	t-stats (Prob)
lnIMM(-1)	-0.682	0.143	-4.78 (0.000)
lnUNEMP	0.070	0.106	0.66 (0.511)
lnGDP	2.085	0.524	3.98 (0.000)
ΔlnUNEMP	-0.221	0.162	-1.36 (0.183)
ΔlnUNEMP(-1)	-0.652	0.163	-4.00 (0.000)
ΔlnGDP	-0.477	1.006	-0.47 (0.639)
ΔlnGDP(-1)	-1.655	0.586	-2.83 (0.008)
ΔlnGDP(-2)	1.725	0.908	1.90 (0.067)
DU_flood	0.137	0.126	1.06 (0.297)
Constant	-21.317	5.406	-3.94 (0.000)
R-squared	0.671		
Adj. R-squared	0.554		
F-stats (Prob)	5.75 (0.000)		
Diagnostic Tests			
D.W. d-stats	1.8614		
ARCH test (P-val)	0.7483		
BG-LM test (P-val)	0.5628		
BP test (P-val)	0.5031		
Ramsey RESET test (P-val)	0.1813		

Model 2: F(lnUNEMP/lnIMM, lnGDP), lag selection based on SBC

Dependent variable: ΔlnUNEMP, 43 observations used for estimation from 2008q1 to 2018q3

Variables	Coefficient	Standard error	t-stats (Prob)
lnUNEMP(-1)	-0.240	0.114	-2.11 (0.043)
lnIMM	-0.906	0.188	-4.82 (0.000)
lnGDP	2.673	0.609	4.39 (0.000)
ΔlnUNEMP(-1)	-0.343	0.175	-1.96 (0.059)
ΔlnIMM	0.691	0.203	3.41 (0.002)
ΔlnIMM(-1)	0.703	0.161	4.36 (0.000)
ΔlnIMM(-2)	0.614	0.135	4.52 (0.000)
ΔlnIMM(-3)	0.248	0.119	2.09 (0.045)
ΔlnGDP	-2.725	0.740	-3.68 (0.001)
DU_flood	0.201	0.123	1.63 (0.113)
Constant	-27.377	6.257	-4.38 (0.000)
R-squared	0.6211		
Adj. R-squared	0.5027		
F-stats (Prob)	5.25 (0.000)		
Diagnostic Tests			
D.W. d-stats	1.9401		
ARCH test (P-val)	0.3999		
BG-LM test (P-val)	0.7471		
BP test (P-val)	0.4741		
Ramsey RESET test (P-val)	0.8440		

Source: Author's calculation

To select the optimum lag length of each series and model, the Schwartz Bayesian Criterion (SBC) has been used in all cointegration estimations. Regarding Pesaran and Shin (1999), the SBC is somewhat superior to Akaike Information Criterion. SBC is also parsimonious because it uses the least acceptable lag to identify the lag selection and avoids losing dispensable degrees of freedom (Pesaran and Shin, 1999).

The results in Model 1 illustrate the significantly positive effect of economic growth on immigration in Thailand. The coefficient of real GDP per capita presents the higher contribution of migrant workers. However, the coefficient of unemployment shows a positive but insignificant impact on immigration. It can be, therefore, concluded that economic growth in the receiving country measured by GDP per capita plays an important part in the increasing inflow of migrant workers in Thailand. The increase in GDP per capita provides more opportunities for employment, which drives in more immigrants.

Model 2 shows the estimated impact of immigration and economic growth on unemployment with a different lag length. It demonstrates that immigration has a significantly negative effect on unemployment in the long-term. This leads to the conclusion that immigrants do not compete with or take jobs away from natives; rather, they tend to complement native workers in the different jobs and increase natives' productivity.

The coefficient of the speed of adjustment term, or the rate at which the independent variables accumulates in dependent variable estimated from the ARDL model, indicates how fast variables can converge to equilibrium in the dynamic model; and it should be statistically significant with a negative sign. Moreover, the higher the significance of the rate of adjustment term, the greater the presence of a stable long-term relation between variables. Table 4 demonstrates that the rate of adjustment term is negative and statistically significant, and equals to -0.682 and -0.240 in models 1 and 2, respectively.

Furthermore, several diagnostic tests were conducted for each ARDL model. For instance, the ARCH test confirmed that the heteroscedasticity in the residual term is not present in each model. The Breusch-Godfrey LM test showed that no residuals are serially correlated, and the Ramsey RESET test indicated that each model is correctly specified. Additionally, the cumulative sum (CUSUM) and the cumulative sum of squares (CUSUMSQ) tests on the recursive residuals were used in each ARDL-bounds model to justify the stability of both long-run and short-run coefficients. According to Bahmani-Oskooee (2001), CUSUM and CUSUMSQ statistics are conducted to evaluate the valid stability of the regression coefficients in which they can analyze whether the given regression is stable over time. These stability tests are appropriate for time series data, particularly when the structural change is uncertain. If the CUSUM and CUSUMSQ statistics plots are lying within the 5% significance level of the upper and lower critical bounds, then the null hypothesis that there is a valid stability of all coefficients in the ARDL model can be accepted. It can be seen that the CUSUM and CUSUMSQ statistics test of models 1 and 2, as displayed in Appendices E and F, remain within the upper and lower critical bounds, suggesting that both short- and long-run coefficients are steady in each ARDL model.

5.4. Granger Causality

In this section, a causality analysis to supplement the long- and short-term inferred results will be further performed to identify the robustness of causal linkages between the variables of immigration, unemployment, and GDP per capita. First, the causal linkage between immigration and GDP per capita is investigated. There are three possible cases: (i) immigration-led GDP growth is the case when immigration improves the GDP per capita of the recipient economy; (ii) GDP growth-driven immigration is the case when the real GDP of the recipient economy attracts immigrants; and (iii) the

two ways are the causal link between them. Second, the causal linkage between immigration and unemployment is investigated. Although Table 4 shows that there is a presence of a long-run causation between immigration and the variables of unemployment and GDP per capita, the causal relations between these variables are unclear. Therefore, it is better to examine whether there is considerable evidence of the link between these three variables.

To implement the causality analysis among the study variables, Granger causality tests were employed. Granger's (1969) causality test was applied not only because it is the simplest and most straightforward method, but also because it shows the existence of causal ordering in a sense that points to a low causation implying predictability and exogeneity. To analyze the Granger causality test in this study, the estimated equations using the following bivariate vector auto regressive (VAR) model are given below:

$$lnIMM_t = \lambda_1 + \sum_{i=1}^{k} a_{1i} lnIMM_{t-i} + \sum_{j=1}^{k} b_{1j} lnUNEMP_{t-j} + \varepsilon_{1t} \tag{3}$$

$$lnUNEMP_t = \lambda_2 + \sum_{i=1}^{k} a_{2i} lnUNEMP_{t-i} + \sum_{j=1}^{k} b_{2j} lnIMM_{t-j} + \varepsilon_{2t} \tag{4}$$

$$lnIMM_t = \lambda_3 + \sum_{i=1}^{k} a_{3i} lnIMM_{t-i} + \sum_{j=1}^{k} b_{3j} lnGDP_{t-j} + \varepsilon_{3t} \tag{5}$$

$$lnGDP_t = \lambda_4 + \sum_{i=1}^{k} a_{4i} lnGDP_{t-i} + \sum_{j=1}^{k} b_{4j} lnIMM_{t-j} + \varepsilon_{4t} \tag{6}$$

The results of Granger causality test displayed in Table 5 indicate that the null hypothesis of the Granger causality that unemployment rate does not affect immigration is significantly rejected in all the lag lengths with no evidence of reverse causality. Therefore, there is a unidirectional causality from unemployment to immigration. Moreover, the failure to accept the null hypothesis of the Granger causality that GDP per capita does not lead to immigration also shows that unidirectional causality occurs between GDP per capita and immigration, confirming the results of the ARDL model estimations. These results clearly imply, as could be expected from the current economic situation in Thailand, that both unemployment rate and GDP per capita in the host economy are the major pull factors of immigration.

Table 5 Granger Causality Test

Null Hypothesis	F-Statistics				Decision
	Lag 1	Lag 2	Lag 3	Lag 4	
IMM does not Granger-cause UNEMP	0.0285	0.8129	0.2708	2.5185	Accepted
UNEMP does not Granger-cause IMM	7.6484***	10.788***	11.104**	10.664**	Rejected
IMM does not Granger-cause GDP	3.1845	1.7854	1.7612	4.4913	Accepted
GDP does not Granger-cause IMM	11.277***	6.2365**	8.7256**	9.0094*	Rejected

*, **, *** indicate the rejection of the null hypothesis at the critical value of 10, 5, and 1%, respectively.

Source: Author's calculation

6. Discussion and policy implications

This article has assessed the causal relation between immigration and two selected macroeconomic variables, unemployment and GDP per capita in Thailand, using the approach of ARDL-bounds cointegration and Granger causality tests. Zivot and Andrews (ZA) tests were applied to identify structural breaks in all macroeconomic data series endogenously. The structural breaks significantly detected over the fifteen-year sample period were found to be plausibly related to two important events occurring in Thailand during the period 2009-2012: the first was the impact of the global economic crisis or subprime mortgage crisis in 2008, and the second was the sudden severe floods in several regions of Thailand from mid-2011 until early 2012, which led to economic stagnation in the country. The ARDL model was then employed to determine the antecedents of immigration in the short- and long-run taking these structural breaks into consideration. By and large, this analysis reveals that, in both the short- and long-run, GDP per capita has a positive and statistically significant impact on immigration in Thailand. The estimated results also suggest that the inflow of immigrants has a significantly negative impact on unemployment in the long term. Furthermore, strong evidence resulting from the Granger causality tests emerged to support the existence of a unidirectional causality from GDP per capita to immigration in the long term. Nevertheless, the results of Granger causality test are indicative of unidirectional causality from unemployment to immigration in the short run.

The study reveals bidirectional causality between the variables of immigration and unemployment. In the initial periods of economic development, the process may have started as a unidirectional one where the increase in unemployment due to several factors, such as demographic transitions and job characteristics in Thailand, causes immigration; but later it turned in the opposite

direction, where immigration *does not* augment the unemployment in the host country, but rather helps to reduce unemployment as a mean of complementary inputs. Furthermore, the estimated results suggest that economic growth in the host country, measured by GDP per capita, causes immigration in both the short- and long-run dynamics. Therefore, this may lead to the conclusion that economic growth and unemployment rate in Thailand have generally promoted or attracted more immigration.

In this regard, a number of policy implications have emerged from these findings. To illustrate, owing to immigration's reduction of the unemployment in the host country, migrant workers as complementary inputs to native workers increase the productivity of natives in various types of jobs. Meanwhile, immigration will be a great human capital to the Thai economy in the future as an additional labor supply which will indirectly help to foster economic growth. Hence it is necessary to take care of basic requirements for migrant workers and implement a well-designed immigration policy which takes into account how many and what type of foreign-born workers are needed in order to obviate any difficulties or negative impacts on the migrant-receiving country. In addition, the results indicate that immigration does not crowd out native employment, nor lead to increased unemployment, but rather helps to reduce the unemployment rate in the labor market of the host economy as a mean of complementary inputs. This invalidates the prevailing arguments that migrant workers reduce job opportunities for the existing workforce in Thailand. Policies, therefore, should be improved by the government to educate native residents to tolerate the presence of an increasing number of temporary and permanent migrant workers. In addition, Thailand has to specify clear targets and goals regarding immigration policies. Making Thailand attractive to foreign-born workers, especially highly-skilled ones, must be a priority and challenge for the policymakers.

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Appendix A. Number of Immigrants from Major Countries (in thousands)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Myanmar	1083.5	944.3	1313.3	715.7	780.2	933.9	996.6	935.4	1341.0	1205.1
Lao PDR	161.1	106.1	168.6	81.1	61.0	54.1	68.1	105.8	154.5	225.7
Cambodia	179.2	122.6	347.8	202.1	185.5	194.9	210.4	251.9	338.4	425.5
Japan	23.2	24.0	25.9	29.8	35.5	35.5	36.7	36.5	36.6	33.7
China	8.7	9.0	9.6	12.0	15.2	17.0	18.8	22.2	23.6	25.9
UK	8.5	8.6	9.1	9.8	11.0	10.7	10.8	10.6	10.4	10.2
India	8.0	8.2	8.5	9.3	10.8	11.0	12.0	12.4	13.6	14.0
USA	6.6	7.0	7.4	8.2	9.3	8.6	8.8	8.6	8.2	7.9
The Philippines	6.8	7.0	7.8	9.2	12.0	12.2	13.4	14.4	15.2	17.3
Taiwan	4.6	4.5	4.0	4.4	4.9	4.9	5.3	5.5	5.7	5.8
South Korea	3.3	3.2	3.4	3.5	4.3	5.8	6.1	6.0	6.0	5.8
Australia	3.0	3.0	3.1	3.2	3.5	3.4	3.5	3.4	3.3	3.2
Germany	2.6	2.7	2.7	2.9	3.4	3.2	3.2	3.3	3.4	3.5
France	2.6	2.8	3.0	3.5	4.1	4.3	4.7	5.0	5.1	5.1
Malaysia	2.3	2.2	2.2	2.3	2.8	2.7	2.8	2.8	3.0	3.3
Canada	1.5	1.6	1.5	1.7	2.0	1.8	1.9	1.9	1.8	1.8
Singapore	1.6	1.5	1.5	1.7	1.9	1.9	2.0	2.0	2.0	2.1
The Netherlands	1.1	1.1	1.1	1.2	1.4	1.3	1.4	1.4	1.4	1.4
Italy	1.2	1.3	1.4	1.6	1.9	1.9	2.0	2.1	2.1	2.1
Switzerland	0.9	0.9	0.9	1.0	1.1	1.1	1.1	1.1	1.0	1.0
Pakistan	0.7	0.7	0.8	0.8	1.0	1.0	1.2	1.2	1.2	1.2
Russia	0.8	1.0	1.4	1.8	2.5	2.8	2.4	2.6	3.0	3.1
Sweden	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.4	1.3	1.2
Other countries	41.3	45.6	34.5	37.3	42.0	37.2	42.7	55.4	99.0	125.6
Total	**1554.0**	**1309.9**	**1960.5**	**1145.2**	**1198.5**	**1352.4**	**1457.2**	**1492.9**	**2080.8**	**2131.5**

Source: Office of Foreign Workers Administration 2009-2018

Appendix B. Descriptive statistics

	lnIMM	lnUNEMP	lnGDP
Mean	0.6316	-0.0223	10.4367
Maximum	1.2679	0.7308	10.6365
Minimum	-0.6225	-0.7510	10.2717
Std. Dev.	0.3882	0.3172	0.0988
Variance	0.1507	0.1006	0.0098
Skewness	-0.8648	0.0733	0.0254
Kurtosis	3.9100	2.7786	1.9379
Observations	47	47	47

Appendix C. Correlation Matrices

	lnGDP	lnUNEMP	lnIMM
lnGDP	1		
lnUNEMP	-0.0265	1	
lnIMM	-0.0812	-0.1519	1

Source: Author's calculation

Appendix D. ARDL-Bounds Testing Statistics

Accept H_0: No cointegration, all x_{it} I(0)

F-statistic inconclusive

Reject H_0: Cointegrating relationship exists

I(0) crit. value < F-stat. < I(1) crit. value

I(0) critical value

I(1) critical value

Reject H_0: Cointegrating relationship exists

t-statistic inconclusive

Accept H_0: No cointegration, all x_{it} I(0)

I(1) crit. value < t-stat. < I(0) crit. value
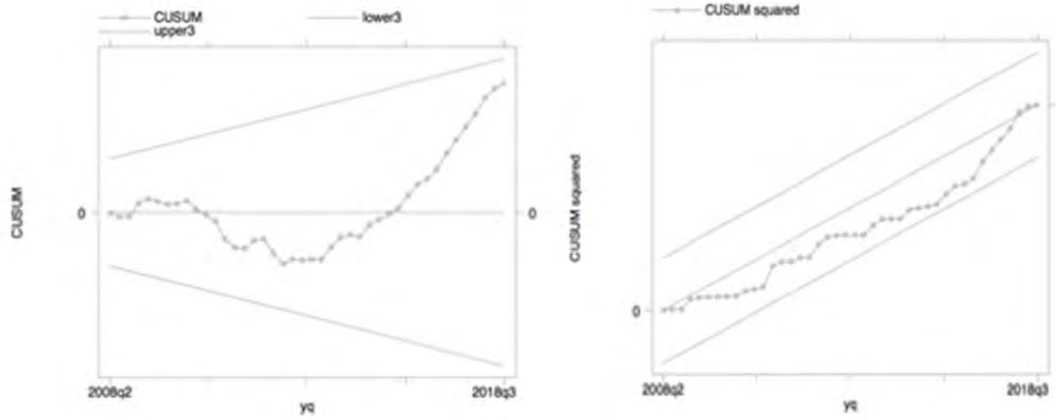
I(1) critical value

I(0) critical value
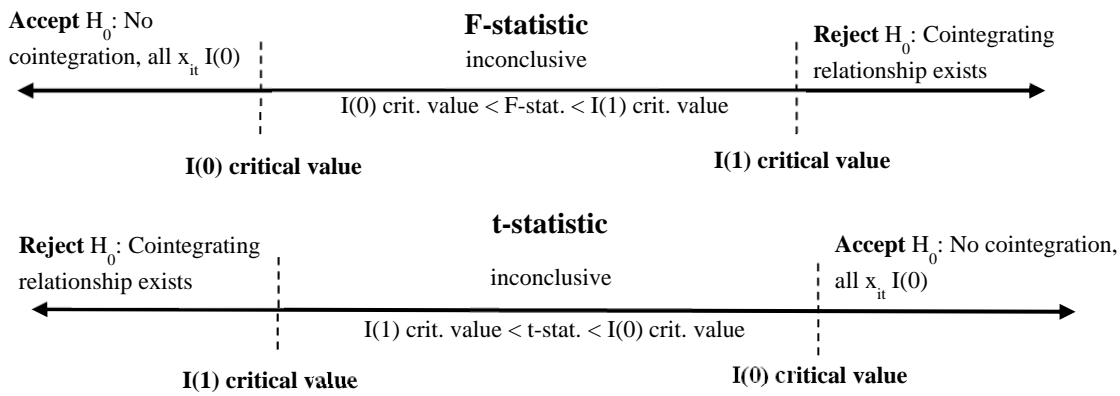
Source: Philips (2018)

Appendix E. CUSUM and CUSUMSQ of Model 1: F(lnIMM/lnUNEMP, lnGDP)

48
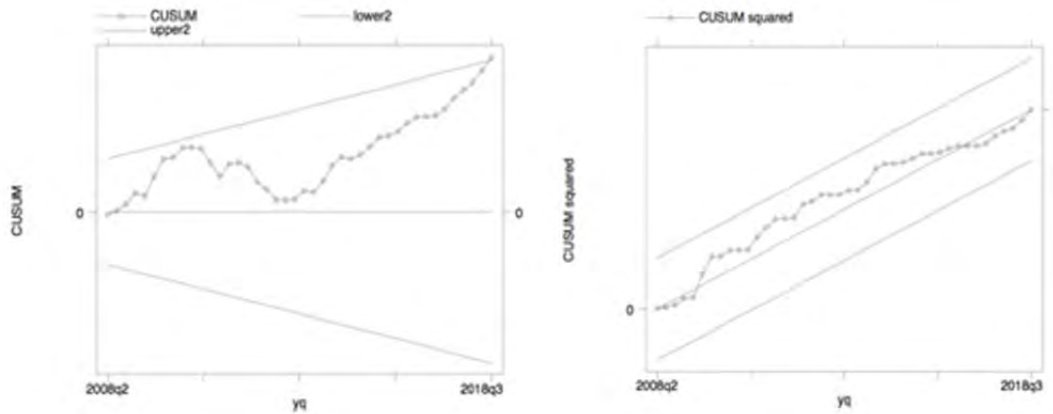
Appendix F. CUSUM and CUSUMSQ of Model 2: F(lnUNEMP/lnIMM, lnGDP)

Source: Author's calculation

Measuring Inclusivity and Marginality:
Determining the Accuracy of Various Location Quotient Approaches in Estimating the Philippine Regional Input Output (IO) Coefficients

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Abstract

The main purpose of this study is to estimate the 1994 regional input-output (IO) coefficients using the Location Quotient (LQ) approaches and determine their forecast accuracy descriptive measures. Using employment and value- added data in the regional level evaluated through statistical assessment based on the statistical association to the regional IO coefficients created through hybrid method in 1994. This undertakes the result that employment is the appropriate set of regional data and Flegg's Location Quotient approach is adequate for the comprehension of regional economic behavior, structural, economic and spatial attributes. Hence, necessary procedure to rely on.

The pursuit of regional economic development analysis requires detailed information about dynamics of regional economies. This proposes a method of constructing the regional IO models from the national IO table using various Location Quotient (LQ) approaches. This discusses various kinds of LQ approaches and their salient features. Lastly, this contributes to several kinds of literature, particularly to an emerging area of study- estimating the regional IO using the LQ indicators and their issues for application.

Key Words*: location quotient, non- survey method, regional IO, Philippines, inclusive growth,*

Introduction:

As Karl Marx said, "The Philosophers have only interpreted the world, in various ways. The point, however, is to change it." However, in order to introduce changes, quantifiable measures should be put in placed. Quantification is vital to understanding institutions as it helps establish commensurability in stakeholders' actions and results.

National or regional economies always exhibit interdependencies. In economics, the national Input-Output (IO) table mirrors these interdependencies. It presents details on the process of production, the use of goods and services, and income generated from production. It is a matrix representation of an economy for a particular period through inter-industry relations, showing how the output of one industry is used by other industries and final consumers. For example, new infrastructure investments will increase construction activity. Then, an increase in construction activity requires an increase in the production of other inputs and services. Subsequently, these effects are followed by a third, a fourth, and so on. One of the most current problems in the Philippine economic development is the failure to create updated regional IO tables for policy analysis due to limited budget and exclusion to the overall current policy of the administration. In regaining focus on regional science and a possible shift to federalism, the Philippines needs a tool that can expose economic differences among regions. Whereas national IO tables give better granularity to the national accounts through an application of the technology of production, regional IO tables provide regional variation in technology and an understanding of the role of inter-regional trade in an economy.   Since the Philippines publish only national IO tables, then there is limited information about the inter-industry regional relations.

Background of the Study:

Regional IO coefficients show the degree to which various businesses in a certain region are interrelated. It gives the quantifiable multiplier effects; the growth in the aggregate output due to the preliminary investment in the aggregate demand. Instead of using national IO table, it is used in deriving policy effects or estimating production activities for a specific region to consider the real situation of the specific region under study. At the center of the interplay of inclusiveness and economic growth, it is significant to create a regional economic tool that can identify industry linkages and measure accurate economic impacts in the regional level.

The use of the IO model is usually done at the national level. However, the shortcoming of conducting national analysis is its inability to show certain regional differences as it only considers the national economy as one spatial entity. However, regional differences should not be taken for granted as interregional trade connecting several provinces of the economy plays an important role in the local economy and business expectations of nearby and central regions.

The original studies about the creation of regional matrices were accepted using to some degree of both local and national data. Based on studies conducted by Miller and Blair (2009), the most significant academic developments were created by Isard (1951) and Leontief (1955). Subsequently, studies of Leontief and Strout (1963), Morrison (1974), Morrison and Smith (1974), Round (1983) and Richardson (1985), Round (1983), Miller and Blair (1985), and Hewings and Jansen (1986) contributed to the development of the field of regional science.

Since the Philippines publishes only national I-O tables, there is no comprehensive information about the inter-industry relations of regions, which would help in creating the foundation of its regional research. Various regionalization methods can expand and capable of generating evaluations of regional I-O relations. Most of the estimations involved with approximating regional tables are using actual empirical data each stressing its technical and economic advantages. Although extensive research has been carried out regarding Philippine regional economic development, no research is available which satisfactorily covers creating tools for measuring inter-regional economic growth such as constructing regional IO coefficients. Unfortunately, the Philippines does not have such kind of tool since it entails cost and human resources to do a methodological survey in every region in the Philippines.

Objectives

Notwithstanding its increasing significance in the economy, regional IO modeling has long been overlooked by most of the economists. In order to understand the overall concept, there is a need to scrutinize variety of issues relevant to various stakeholders. In order to use these tools, the researcher must have access to corresponding IO tables. National IO coefficients are presently created and distributed by the Philippine Statistics Authority according to Philippine Standard Industrial Classifications. As the Philippines has no regional IO coefficients as of this time, this thesis has several objectives. Firstly, this reviews the main methodological features by estimating the 1994 regional input-output coefficients using various Location Quotient (LQ) approaches and determine the forecast accuracy descriptive measures as it is significant to understand which is the appropriate LQ approach from a business/ economic planners' perspective and looks at the appropriate set of regional data in creating the appropriate LQ approach. Secondly, it undertakes statistical assessments of the main differences and similarities among non- survey approaches of estimating regional IO coefficients and examines feasibility of creation of efficient LQ using either value- added or employment data. Lastly, it seeks to make an informed set of policy recommendations and corporate strategies that may help influence a greater development role of regional IO coefficients in the Philippines.

Framework

The theory of Leontief (1936) demonstrates the economic theory of general equilibrium in an empirical flow of economic interdependence among major actors in the economy as manifested in existing prices, outputs, and investments. Leontief proposed a model of economic interdependence through the field of IO analysis. The IO analysis measures inter-industry linkages and impacts on the changes in demand on employment or income. An IO table is a network, where nodes are the segments of an economy (i.e., variousindustries economy in) and the edges are the monetary flows of goods within these nodes. The creation of regional IO coefficients is based on a conceptual and procedural framework of regional economic spaces. The concept of economic space is defined as the economic relations which exist among economic elements (e.g., capital, labor). The need for regional IO coefficients is due to the existence of the concept of economic nodes. Economic development and growth tend to be unstable as economic nodes with tremendously condensed economic activities and demographic concentration. These economic nodes become regional centers of industries where majority of the spatial concentration of production and consumption are situated. Also, it is associated and connected by the economic flows created among industries on which as a whole assimilate the economic space. It acts as economic complementaries or competition among themselves or just a mixture of both. This framework works on certain assumptions. First, production functionsare in constant returns to scale and are acquired in fixed proportions (e.g., no input substitution). ,Second industries are homogeneous. This reflects the impact on income and employment, or in any other industry variable available. Lastly, there is a direct linear relationship amid output and the variable in question.

Review of Related Literature

IO Tables: The Philippine Experience

The Philippines have national IO coefficients since 1961 then in 1965 by the National Economic Council (the forerunner of National Economic and Development Authority) and the Bureau of Census and Statistics (now Philippine Statistics Authority). The next successive tables were 1969, 1975 and 1979 and were created under the collaborative works of the two government authorities. The national IO table represents the country's macroeconomic structure for a particular period. It also shows the production process' movement and the estimated income created. It demonstrates how the production (output) of one industry is utilized (input) by other industries and final consumers. It covers comprehensive data on revenue, cost, and inventories in businesses and industries fitting to the formal sector of the economy for the particular year. These data are needed to build an input structure and to construct a distribution of output. It is a product of the national survey of establishments confined to the formal sector of the economy engaged in economic activities as

classified under the Philippine Standard Industrial Classification.Philippines ,On the other hand only had regional IO coefficients in 1994 with the help of Japanese government.   In 1994, Secretario (2001) and the Philippine Statistics Authority (PSA) created the first and the only inter-regional IO table for the Philippines in the study entitled *Construction of Inter-Regional Input-Output Table for the Philippines 1994 under the JSPS- Manila Research Project Final Report.* As development economists are geared towards accuracy in its measurements, they need regional IO coefficients. However, no single regional IO coefficients are created after 1994 due to huge cost consumed in creating an IO table as it uses surveys and primary statistics data.

The awareness in extending this bid to different regional spatial units usually sub-national regions led to changes in the national model to a set of regional IO models. Unfortunately, the Philippines does not have detailed plans in accomplishing overall regional IO coefficients. Inability to accurately measure regional growth, may have an implication in terms of policy creation and implementation. First, it may result to lack of robust planning. This will make policymakers focus on their objective and may overlook the production of what is likely to happen on the actual policy implementation. Secondly, it may lead to inappropriate and misaligned programs and policies in the local level as policy prescriptions are made by the central government. According to McConnell (2010), achieving effective policy comes from a good policy design, ex- ante evaluation of proposed policies rather than ex-post evaluation, policy refinement change or even termination. Thirdly, it may not be possible to create a synergistic and synchronized overall development agenda. Without local statistical figures may cause disagreements on creating overall development agenda. Local executives may not collaborate with each other and may not warn others about the negative spillover of their negative actions has its own objective which can be contradictory to others can cause delays in policy creation and implementation, distortion on policy agenda.

Estimating Regional Input- Output Coefficients

There are several well-known methods of regionalization available in the review of related literature regarding IO coefficients. Miller and Blair (2009) introduced various compiling methods such as Isard-type and Chenery Moses-type. These two approaches vary in the supposition of interregional trade coefficient. The Isard type needs a comprehensive set of intra- and interregional data, while it is hard to get such interregional trade coefficients for each sector in each region. Various empirical studies have measured and compared the accuracy of LQ techniques such as those developed for Scotland (Flegg and Webber, 2000), Finland (Flegg and Tohmo, 2013), and Germany (Kowalewksi, 2013). Bonfiglio and Chelli's (2008) Monte Carlo simulation. On the other hand, the Chenery-Moses presents advantages because of the practical application of the common interregional trade coefficient for each sector in each region. Since the interregional trade data are still hard to get ,many

researchers were able to modify their studies to some kind of non-survey method in the estimation of the interregional trade coefficients such as LQ techniques, gravity model, and RAS methods.

In case of survey methods, businesses in the sample population of the survey provide data about their sales (towards other businesses and consumers) and their purchases (from other businesses) within and outside the region. Businesses in various regions can create various products or use various inputs for their production developments. Conduct of surveys may take into consideration such special local features, though costly for small- scale studies. It also has several drawbacks such as time and resource intensive process to conduct a survey. The creation of the sample is crucial; any errors can lead to important alterations in the final result and data gathering from businesses may not be stable and the results of matching methods are sometimes not aligned with the established industrial classifications (especially in case of smaller samples). In using non-survey methods, policymakers and business planners can save time and resources. In this case, various estimation methods can create regional IO coefficients using national ones as a starting point. Usually, procedures are improved by using supplementary regional figures. The most advantageous part of the non-survey approach is that these techniques can be applied relatively easily if secondary data is accessible. Despite the accessibility, there is still no agreement about the methodology due to the uncertain performances of different approaches. Furthermore, the absence of appropriate and sufficient regional data limits the diversity of potential methods. Although plagued with some issues related to its precision and simplicity, non-survey methods still expands regional economic development scene .In Southeast Asia, hybrid methods are not appropriate because there are no sufficient regional figures available to run sophisticated econometric models, or there are barriers that avert the conduct of surveys on some pertinent data. Fortunately, numerous new studies are endorsing the possible further growth of non-survey approaches. Given the inadequacies inherent in hybrid methods and the high cost of gathering regional data, analysts uses progress methods which avoid the costs of model construction while using an intersectoral firework for measuring regional economic impacts. Secretario (2001) used a hybrid approach in creating intra and inter regional IO tables by utilizing surveys such as Family Income and Expenditures Survey, Commodity Flow Statistics, Gross Regional Domestic Product (GRDP), Gross Domestic Regional Expenditures (GRDE), and Input- Output Survey of Establishments (IOSE). This process had higher level of accuracy of the survey technique and the effectiveness and speed of the non-survey technique. The LQ approach is the most suitable as it requires the fewest data.

A. UsingNon- survey Method

The easiest substitute to the survey is the application of the non-survey approach. Its important features are making use of national IO coefficients and estimating from a matrix of regional

purchasing coefficients using published data from statistics authority. It aims to scale down the national IO to regional magnitudes using typical data with mechanical measures. The emphasis is creating IO coefficients quickly and cheaply, whilst maintaining a general level of accuracy. The regional data requirements for this methodology are necessarily low. Generally, this needs regional and national employment figures disaggregated to the regional level. It uses current statistics to evaluate an IO table by numerical calculations and attracts researchers and practitioners due to its simplicity and economical aspects. It is recognized as a useful and strong tool, and various mechanismshave been settled to improve the estimation accuracy of regional input coefficients.

Based on the studies conducted ,FLQ approach yields far superior results compared to other LQ-based formula. It shows that it produces more accurate results than other LQ approaches since it allows for interregional trade and considers regional inclinations to import. Only FLQ is able to satisfy the requirements needed for deriving appropriate trade coefficients.

B. Computing for Location Quotient Approaches

This research used regional employment and value- added data for Simple LQ, Cross Industry LQ, Round's LQ and Flegg's LQ .approaches

Simple Location Quotient (SLQ)

The SLQ is denoted as the share of regional output divided by the share of national output held by the national industry i.

$$\frac{Q_r/T_r}{Q_n/T_n}$$

Q_r: Employment/ value- added statistics for the industry i in region r

T_r: Total Employment/ value- added statistics in the whole region r

Q_n: Employment/ value- added statistics for the industry i in the country

T_n: Employment statistics/ value- added in the whole country

When SLQ is greater than 1, the region is relatively focused in the production of industry i and is a net exporter of the commodity. On the other hand, when less than 1, the region is relatively unspecialized in the production of i and is subsequently a net importer. Hence, has strong reliance with other regions. An answer of unity denotes self-sufficiency within the creation of i. The conditions stipulate the trade alignment of I are set out by Isard (1960). The methodology requires equality between regional and national production techniques and consumption tastes. The concept of cross-hauling (simultaneous import-export flow) of any given product is also removed. One of the disadvantages is its simplicity as it asserts that usual incomes have to be equalized across regions.

Researches conducted by Greytak (1969) and Isserman (1977; 1980) see that the quotient does not recognize trade orientation. Within the background of their use in IO analysis, the approach is the extension of the innovative export base utility. By assumption, the framework of national IO coefficients is the starting point for the calculation process. The LQ for each supplying sector I are estimated and constrained to unity. The estimated quotients are then multiplied across the rows of the national A matrix to create the estimated regional IO coefficients. The equation below is a demonstration of an LQ approach:

R= kA where k is the I dimensional vector of LQ, k ≤ 1

In this equation, k is used as a measure of the propensity to purchase in the local area and demonstrates strong ties with the commodity balance approach of equations. The significant characteristic of the SLQ is its interoperability from national technology. It assumes constant import propensity for each industry/ commodity wherein local specialization in production involves a zero-import propensity. This only takesinto account the size of suppliers.

Cross Industry Location Quotient (CILQ)

$$\frac{SLQ_i}{SLQ_j}$$

This procedure is created by Flegg et.al (1995) in creating a regional IO as it takes into account the size of region's specialization, purchaser and producer. It is the modified version of SLQ in depicting how a region is specialized in production of a certain industry. Its ratio can be interpreted as the relative specialization of the region vis-à-vis the whole country. It only takes into account the size of industry suppliers and purchasers.

Round's Location Quotient (RLQ)

One prevalent change in CILQ is due to Round (1978) as he recommended that the propensity to consume internally in the region rest upon three principal elements: the comparative size of the selling sector ,purchasing sector and ,the region. He recommended that the LQ formula should capture these three impacts.

$$RLQ_{ij} = SLQ/ (log_2 (1+ SLQ_j))$$

The logarithm in the denominator ensures that the region's total regional and national output do not cancel out of the normal cross-industry equation. Therefore, Round's formula is a function of comparative regional size.

Flegg's Location Quotient (FLQ)

One of the most recent discoveries in LQ methodology comes from Flegg et al (1995). Its formula expansion is due to Round's semi-logarithmic quotient accounts for regional size is 'counterintuitive'. Round's LQ shows that as regional size rises relative to the nation ,the LQ between two industries decreases denoting a more open economy.

$$FLQ_{ij} = CILQ_{ij} \text{ x } \lambda$$

This addresses the loopholes of previous LQs. It adds an additional parameter in CILQ that captures the impact of regional size, wherein the smaller the region, the more open the economy. As the usual location quotient- based method methodologies inclined to underestimate imports from other region and overstate regional multipliers, the current FLQ is denoted by parameter $\lambda = [log_2(1+E_r/E_{..})]^{\delta}$ such that $0 \leq \lambda < 1$ and $0 \leq \delta < 1$. δ increases as the allowance for interregional imports also increases. In this study, there is an assumption that the regional purchasing and supplying sectors has the same size, hence δ is 0 and $FLQ_y = CILQ_y$. Moreover, FLQ's value is from 0 to 1, if it s' greater than 1, it means that a region is specialized in that industry and can produce its own demand without importation from other regions, while an FLQ lower than 1 means that the region wants support from other regions for needed supplies. The application process of FLQ is rather asymmetric, if its value is lower than 1, national IO coefficients will be adjusted by multiplying it to the FLQ. On the other hand, if the FLQ is higher than 1, no modifications will be done. Various regional economists stated that the stability of IO coefficients depends on consideration of the following such as the size of supplier industries, size of purchasers, relative sizes of the region and intra and intersectoral linkage.

Secretario (2001) introduces the first and the only inter- regional IO table for the Philippines. He utilizes hybrid method by applying data surveys generated by Philippine Statistics Authority (PSA) such as Family Income and Expenditures (FIES), Census of Philippine Business and Industry (CPBI), Commodity Flow Statistics (CFS), Gross Regional Domestic Product (GRDP), and Gross Domestic Regional Expenditures (GRDE). No other studies related to this has been created in the recent years. The 2012 Philippine national IO table assimilates some of the 2008 System of National Accounts (SNA) suggestions and adopts efficient standards and classification systems. It is aligned with the 2012 national accounts in terms of the gross value added by industry and entire gross domestic product. Moreover, the table shows variations' significance on the industries' production process and in consumption in the macroeconomy. Industry classification in the IO table follows the Philippines Industrial Classification. It can be disaggregated into 11 by 11, 59 by 59, 127 by 127, 230 by 230 and 240 by 240 sectors/ industries.

Methods and Procedures

The research will measure the estimated regional economic impact using Excel and Eviews programs. According to Greenstreet (1989), there are three main techniques in regionalization methodology such as survey, non-survey and hybrid methods. Due to data limitations and non-consensus about the most efficient procedure, the paper will utilize various non- survey approaches such as Simple Location Quotient (SLQ), Cross Industry Location Quotient (CILQ), Round's Location Quotient (RLQ) and Flegg's Location Quotient (FLQ). The basic source of this method is the national IO table and the employment data per region. In regional econometric modeling, employment always serves as a proxy for output due to resemblance and availability.

A. Converting National IO Table to Input Coefficient Form

Convert national IO table into coefficient form. This paper assumes that national and regional technology coefficients are the same. Whereas supply-demand balance equation (balancing of total supply and total demand) is equal to:

$$A= [A^N]= [X_{11}/X_1]; \ i, \ j= 1, \ 2,…n \qquad [1]$$

Where:

A^N is the input coefficient of sector i in order to produce 1 (one unit of output sector j (i,j= 1, 2,…n)

X_{11} is the intermediate input sector I by sector j (i,j= 1,2,…n)

X_1 is the gross output of sector j

Both coefficients are very important. The number of industries accessible in the 1994 national IO table are 11, 59, and 229, but the corresponding number available in the Philippine regional IO tables are 11, 32, and 84. Moreover, the 1994 employment and productivity data are categorized into 32, 35 and 84 sectors per region. To align the sector classification between the surveyed/ actual regional and the estimated tables using employment and productivity data into one-to-one relationship, -the229 sector national IO tables were aggregated 32, 35, and 84 sectors. These modifications eventually result in 32, 35, and 84 sectors per dataset. As it utilizes four (4) kinds of LQ approaches using 32, 35, and 84 sectors, then the re are37,220 total number of estimated regional IO coefficients .These estimated coefficients will be compared to the actual survey of Philippine regional IO coefficients in 1994.

B. Multiplying National Input Coefficient Form to the Suggested Appropriate LQ Approach

Regionalizing IO Coefficients

Various LQ approaches are used for the generation of regional IO coefficients. Their formal use in the generation of regional IO tables can be traced to Schaffer and Chu {op. cit.), although Round (1983) notes that these methods were very pragmatic to use. The research assumes that regional

technological coefficient is equal to the LQ multiplied to the national technological coefficient. In order to disaggregate the national IO table, Kowalewski (2012) used the simple formula can be used to convert national IO into regional coefficients. The regional input coefficients, the A^R, are estimated by multiplying the corresponding national input coefficients, the A^N, by LQ;

Where:

A^R *is the estimated number of units of regional input i required to produce one unit of gross output of regional purchasing sector j. Hence, in this case, it is the estimated intraregional input coefficient.*

LQ_i^R *is the computed location quotient of the sector of a particular region.*

The general procedure of adjustment for A matrix in Region r. It will be used as a self-sufficient ratio, which presents the proportion of input requirements within the region, thus:

$$A^R = A^N \text{ if } LQ_i^R \geq 1$$

$$A^R = A^N \text{ x } LQ_i^R \text{ if } LQ_i^R < 1$$

Using interregional input matrix, the image of producing interregional input coefficient is as follows:

Figure I: Process of Regionalizing the IO table using the LQ Method:

$$LQ_i^R \times A_{ij}^N = A_{ij}^{RR} \qquad\qquad 1 - LQ_i^S \times A_{ij}^N = A_{ij}^{RS}$$

$$1 - LQ_i^{SR} \times A_{ij}^N = A_{ij}^R \qquad\qquad LQ_i^S \times A_{ij}^N = A_{ij}^{SS}$$

C. Testing the Hypothesis

The estimation for regional IO coefficients using various LQ approaches assumes that its characteristics are same with the real regional ones. Hence, there is no difference between the two coefficients. This means that the use of LQ approach involves evaluation of the region's propensities to consume. Hence, this will apply two-sided z- test Two Sample Means for the hypothesis to find out the statistical differences between the real and estimated regional matrices .

Statistical Assessment of the Two-sided Z- Test Two Sample Means for Hypothesis

This test is also recognized as non-directional hypothesis, and it is a typical test of statistical significance when it comes to econometric models. This means that the variances in the results do not occur randomly. Briefly, two-tailed tests divide the 0.05 probability value (p) into two and puts each half on each side of the bell curve in order to determine if there is a relationship among variables in one of the directions. This statistical valuation of the estimated and real regional matrices

determines if their economic linkages, or in this case population mean, are on average different or similar with each other. Assuming there is no difference, we concluded that estimated regional IO coefficients are the same with the real ones. Breaking down the national IO coefficients to show the variations in the domestic capacities of each region through the use of various LQ approaches is imperative for economic regional modeling or regional policy and planning. Non-survey approach is the most efficient way in creating regional IO coefficients is through due to limited data parameters.

D. Determine the Level of Accuracy of Estimated (Non- survey) Regional Input- Output Coefficients vis-à-vis Real (Survey) Regional Input- Output Coefficients

This part utilizes Mean Squared Errors, Euclidean Metric Differences, Mean Absolute Deviations and Theil's Accuracy Measure.

Empirical Analysis

Correlation analysis:

This study has three main results such as the correlation analysis, hypothesis testing and level of accuracy determination. Value- Added Data:
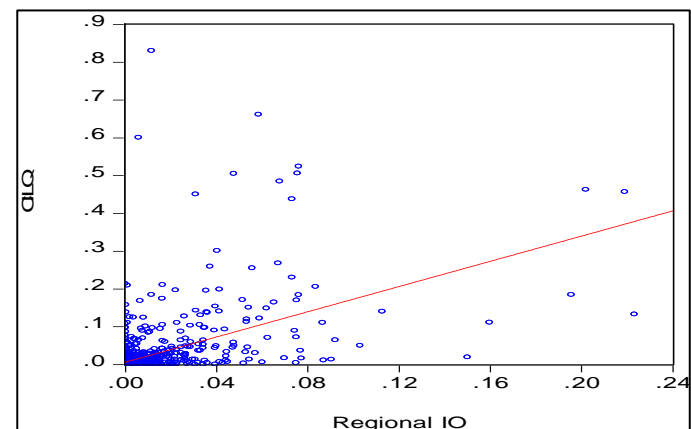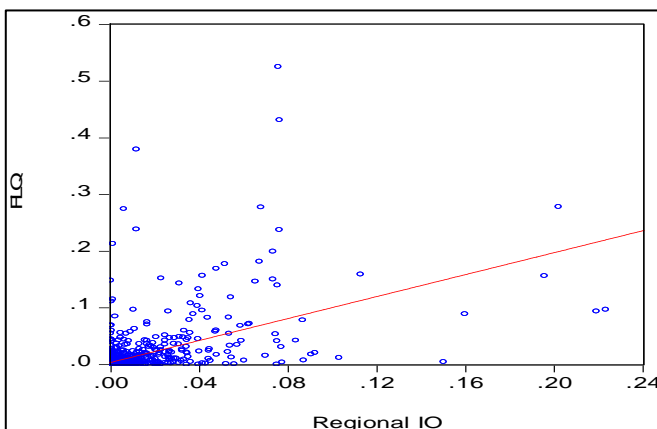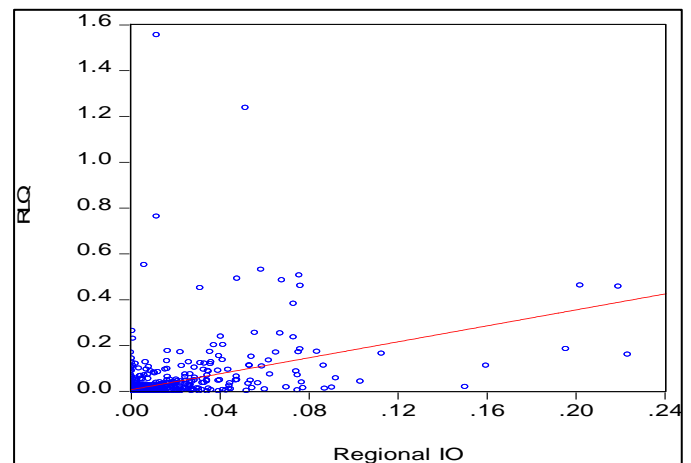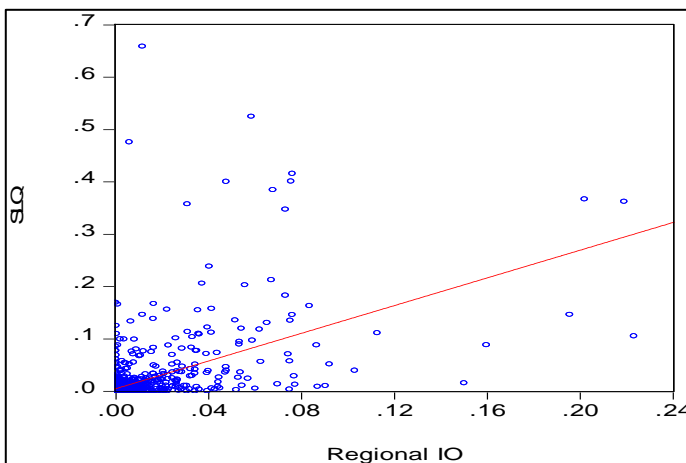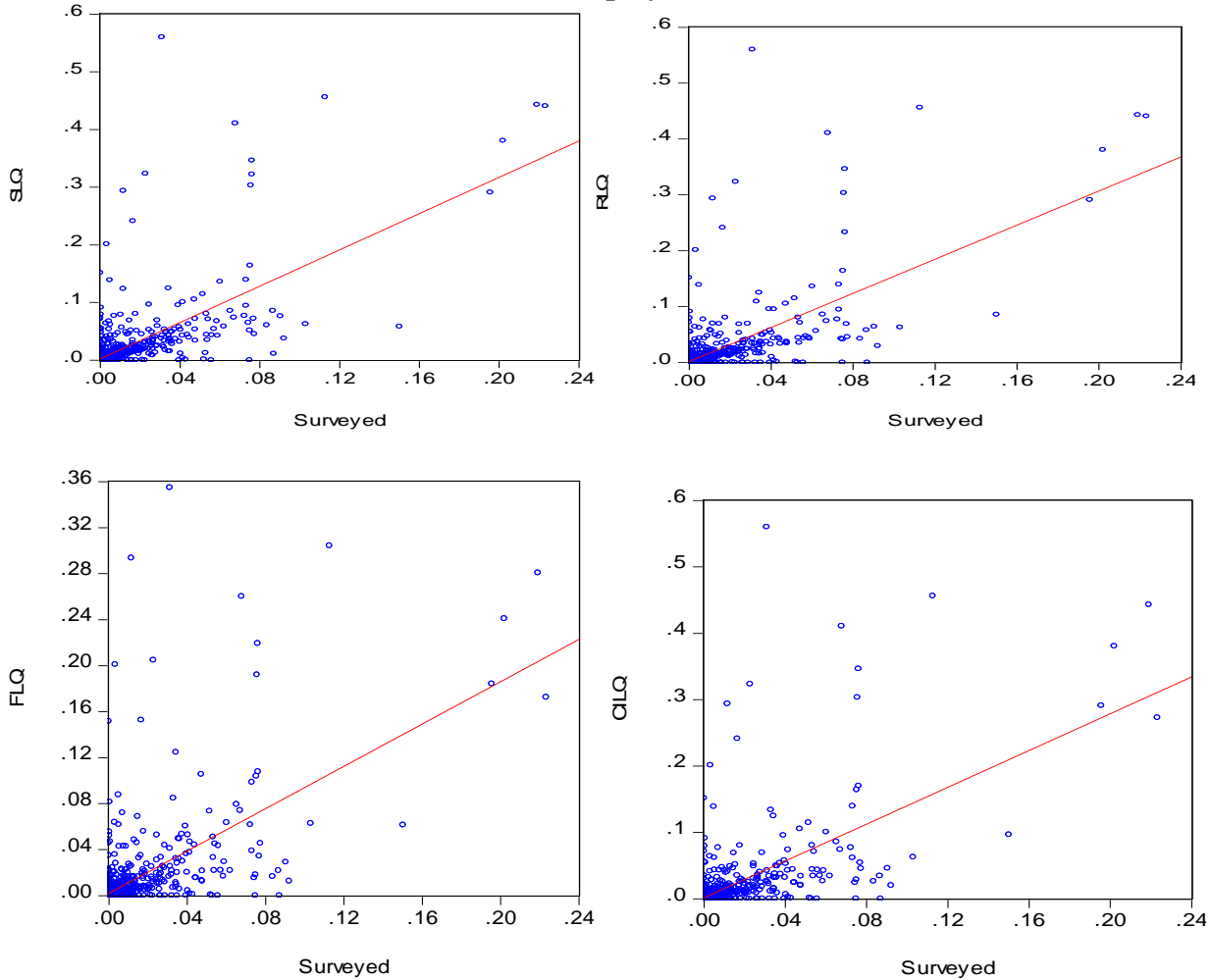
The SLQ using value-added data displayed 0.525 positive linear relationship with the real or surveyed regional IO, while RLQ, FLQ had 0.421 and 0.525, respectively. It is worthy to note that CILQ had 0.527. The results for the value-added were not able to pass the 0.6 mark, which was the usual correlation level of previous studies conducted in some preliminary papers. In this part, value-added data was utilized as the proxy data for productivity. It is the combined gross value added of all suppliers in the region. It is the difference between gross output and intermediate inputsas it denotes the value of labor and capital used in creating gross output and the sum of an industry's compensation of employees, taxes on production and imports, less subsidies, and gross operating surplus. Productivity data have weaker relationship towards the real or surveyed ones due to several reasons. First, the data collection has unpredictable top-to-bottom approach collecting process. Various regions have independent estimates and will not add up to the national total. The national total sector just delivers allocation towards regions using percentage distributions. This design does not safeguard consistency of approximations in the regional level. Second, regional intermediate input usage is disproportional as it inclines to be a much higher proportion of gross output. Regional application greater variations. Cobbold (2003) signified that at the national level, gross output and value-added measures are close, only differing to the extent that intermediate inputs are sourced from imports. Third, it does not take into deliberation price movements of intermediate inputs as it undertakes only the additional value of goods and services produced, thus is defined as economic output less intermediate inputs. The fundamental production function is additive-separable of the form:

$$Y = VA + II;$$

where

Y= Gross Output; VA= value- added; and II= Intermediate Inputs

Employment

The SLQ using employment data displayed 0.688 positive linear relationships with the real or surveyed regional IO, while RLQ, FLQ had 0.681 and 0.617 consecutively. It is worthy to note that CILQ had 0.644. The results for the employment were able to pass the 0.6 mark, which was the usual correlation level of previous studies conducted in some preliminary papers. Both employment and value-added LQ approaches have positive correlations which means both variables are moving in the same direction, with employment usingLQ approach having a higher degree of correlation.

The high correlation between output and employment is attributed to the stability of employment figures. There are institutional, technical and economic grounds on why employment data is considered a better used in estimating industry's output. On institutional grounds, businesses will not readily dismiss employees due to the decline in output, unless it continuously persists. There seems to have low employment flexibility among businesses. Industries have strong inclination to maintain the current level of employment due to humanitarian reasons, union pressures and tradition. In the Philippines, there is a strong legal framework that protects employees from sudden termination. Businesses cannot simply terminate employees due to declining performance and other reason.

Businesses can only dismiss employees if there is a just or authorized cause. Hence, dismissing employees is complex process and is taken very seriously. Using the mechanical productivity concept, the technical aspect can be demonstrated by the industries that have high capital- labor ratio. This could explain why short- run variations in the outputs will not affect employment instantly. Using the economic perspective, the profit maximization theory indicates that if labor turnover costs is higher than the wage costs entrepreneurs will be restrained from dismissing employees especially if the decline in the demand is just temporary. For example, is the turnover cost is 5¥ and if the wage cost is 1¥, then the employee will be kept on for 5/1 time periods amidst output decline so long as it is expected that demand will increase before the 5th (5/1) period.

On the other hand, correlation just shows whether and how strongly variable are related. The correlation coefficient does not mean essentially a causal relation between both variables and it does not tell you which variable is the cause and which is the effect. Hence it would be useful to conduct hypothesis- testing to further evaluate which kind of LQ approach is best supported by the sample data.

<div align="center">Hypothesis Testing:</div>

The hypothesis testing technique used in this paper is the two- sided z- test Two Sample Means for hypothesis:

I. Identify the Parameter of Interest

The Null Hypothesis (Ho) will tell us that the population mean of estimated regional IO coefficients are equal to the real ones, while the Alternative Hypothesis (Ha) will tell the opposite. The main goal is to determine if the characteristics of the estimated regional IO coefficients are similar to the real IO coefficients. Hence, it is very important that the estimated regional IO coefficients have the same characteristics to the real ones in order to show that it can be used for forecasting. Hence, it is imperative to look into a particular LQ approach with P- values higher than .05 as it will entail failure to reject Ho.

z-Test: Two Sample for Means		
	Regional IO	*CILQ*
Mean	0.007042546	0.018130912
Known Variance	0.000377	0.003772
Observations	1225	1225
Hypothesized Mean Difference	0	
z	-6.0250945	
P(Z<=z) one-tail	8.45054E-10	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	*1.69011E-09*	
z Critical two-tail	1.959963985	

z-Test: Two Sample for Means		
	Regional IO	*SLQ*
Mean	0.007042546	0.010709723
Known Variance	0.000377	0.00128
Observations	1225	1225
Hypothesized Mean Difference	0	
z	-3.153106315	
P(Z<=z) one-tail	0.000807715	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	*0.00161543*	
z Critical two-tail	1.959963985	

II.   Formula for the two- sided z- test Two Sample Means for hypothesis

This utilized Eviews 10. This seeks to distinguish the difference of parameters of estimated regional IO coefficients vis-à-vis the real regional IO coefficients. In order to decide which two opposite claims about the established parameters, the hypothesis test utilized confidence interval for a population with a known standard deviation. The pragmatic application of this methodology enables certainty and clarity. This predicts whether the parameter of interest is on average different or similar to the real regional IO coefficients.

Hypothesis- testing for Value- Added Data

z-Test: Two Sample for Means		
	Regional IO	*FLQ*
Mean	0.007042546	0.014375685
Known Variance	0.000377	0.002372
Observations	1225	1225
Hypothesized Mean Difference	0	
z	-4.895201763	
P(Z<=z) one-tail	4.91025E-07	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	*9.82049E-07*	
z Critical two-tail	1.959963985	

z-Test: Two Sample for Means		
	Regional IO	*RLQ*
Mean	0.007042546	0.019398057
Known Variance	0.000377	0.006431
Observations	1225	1225
Hypothesized Mean Difference	0	
z	-5.241058161	
P(Z<=z) one-tail	7.98292E-08	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	1.59658E-07	
z Critical two-tail	1.959963985	

For SLQ, CILQ, RLQ and FLQ created using value-added data, all the P- values are lower than the chosen level of significance, hence null hypothesis should be rejected. This goes to show that these do not have the same characteristics with the real ones. It can be inferred that the regional IO coefficients estimated using these LQ approaches are statistically and significantly different compared to the real/ surveyed regional IO coefficients. The result is consistent with the correlation analysis results that LQ approaches created using value- added data do not have linear relationship with the real or surveyed ones.

Hypothesis- Testing for Employment Data

z-Test: Two Sample for Means		
	Regional IO	*SLQ*
Mean	0.041490816	0.061646171
Known Variance	0.033854	0.048921
Observations	1024	1024
Hypothesized Mean Difference	0	
z	-2.241768953	
P(Z<=z) one-tail	0.012488154	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.024976309	
z Critical two-tail	1.959963985	

z-Test: Two Sample for Means		
	Regional IO	*CILQ*
Mean	0.041490816	0.054316868
Known Variance	0.033854	0.048329
Observations	1024	1024
Hypothesized Mean Difference	0	
z	-1.431699846	
P(Z<=z) one-tail	0.07611487	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	**0.15222974**	
z Critical two-tail	1.959963985	

z-Test: Two Sample for Means		
	Regional IO	*FLQ*
Mean	0.041490816	0.044717683
Known Variance	0.033854	0.03817
Observations	1024	1024
Hypothesized Mean Difference	0	
z	-0.38476223	
P(Z<=z) one-tail	0.350206792	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	**0.700413585**	
z Critical two-tail	1.959963985	

In the LQ approach using employment data, SLQ's exact level of significance (P- value) is lower than the chosen level of significance of alpha= 0.05 which is at 0.025. Hence, it can be inferred that there is enough statistical evidence that the thesis has to reject null hypothesis. It goes to show that the regional IO coefficients created by SLQ do not have the same characteristics compared with the real ones. For CILQ, FLQ, and RLQ, all their P- values are higher than the chosen level of significance which were at 0.15, 0.700, .072, respectively. Hence, it can be inferred that the thesis has no enough statistical significance to reject the null hypothesis. This goes to show that these only CILQ, FLQ and RLQ approaches, using employment data, have the same characteristics with the real ones.

z-Test: Two Sample for Means		
	Regional IO	*RLQ*
Mean	0.041490816	0.057641876
Known Variance	0.033854	0.048854
Observations	1024	1024
Hypothesized Mean Difference	0	
z	-1.797120765	
P(Z<=z) one-tail	0.036158225	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	*0.07231645*	
z Critical two-tail	1.959963985	

Level of Accuracy of Estimated Regional IO Coefficients using Employment Data
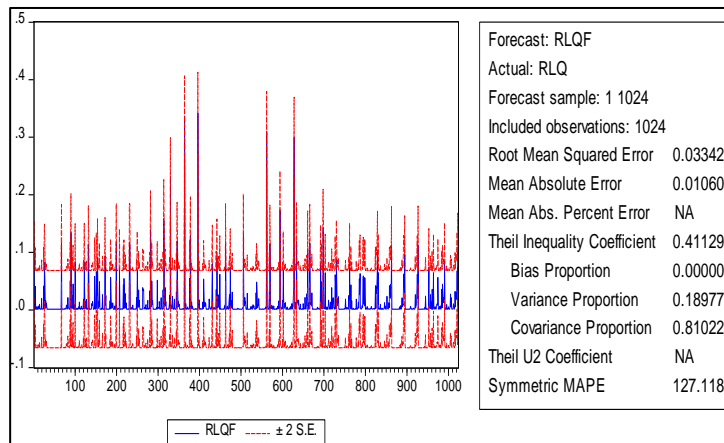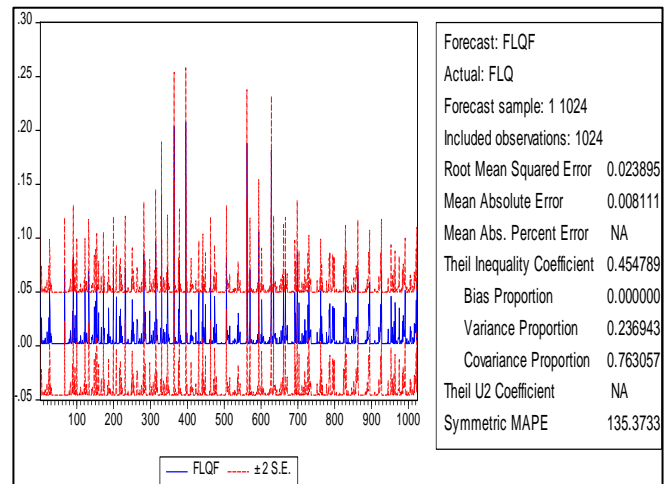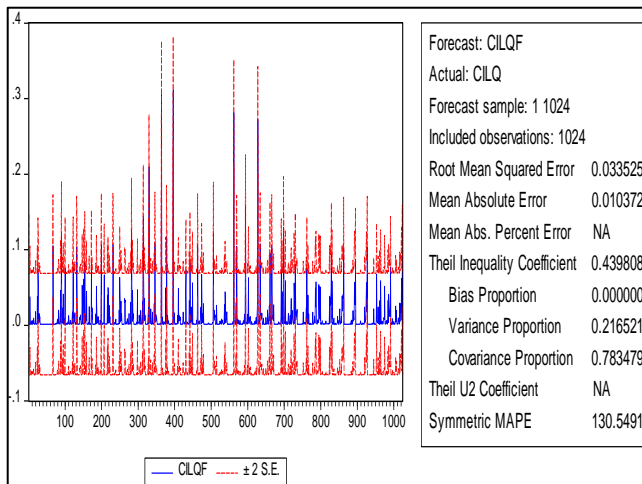
Graphs above show the accuracy assessment of LQ approaches using employment data with the pronounced accuracy measures used in evaluating macroeconomic models. In this part, SLQ was not included as the results of hypothesis- testing indicated that there is enough statistical evidence that SLQ does not have the same characteristics as its population mean is not equal to those surveyed or real regional IO. It would be worthwhile to consider that the value of δ in FLQ is 0.25 as it lies between the acceptable range of around 0.2 to 0.3 as suggested by various studies, regional economic science experts and representatives from Philippine Statistics Authority. Moreover, it is strongly suggested that 0.25 as the best single value as it would not introduce bias and will have maximum gain in terms of accuracy. From the results above, the FLQ registered the smallest values in four out of four measures, such as Root Mean Squared Error, Euclidean Metric Difference, Mean Absolute Error, and Theil's Inequality Coefficient indicating the best accuracy of all LQs. It got 0.024, 0.768, 0.008, and 0.402, respectively. On the other hand, RLQ and CILQ do not perform as well as the FLQ. CILQ got 0.034 for the Root Mean Squared Error, 1.111 for Euclidean Metric Difference and Mean

Absolute Error at 0.010. RLQ scores the worst in all accuracy assessment 0.334 for Root Mean Squared Error, 1.137 Euclidean Metric Difference, 0.011 on Mean Absolute Error and 0.411 for Theil's Inequality Coefficient. In order of decreasing accuracies, the result is as follows FLQ, CILQ, and RLQ. Using both employment and value- added data, it can be seen that LQ approaches which used employment performed better than value- added. There are various theoretical and conceptual frameworks that supports this thesis.

Why Employment?

The theory of employment assumes a close positive relationship between changes in physical output and changes in the volume of employment. Based on Wilson (1960), there are various economists who used this relationship. In his General Theory of Employment Interest and Money, John Maynard Keynes used labor input as a measurement of output. He used the number of hours of labor to measure changes in current output. Robert Biggs denoted that changes in the level of economic activity correspond to the changes in employment. Lastly, Stonier and Hague stated that increased output of the product of any industry is usually associated with increased employment. The positive relationship by employment and output can be seen in the methodology of forecasting employment. The general method of estimating employment from output or aggregated demand prediction is usual. In this methodology, employment data is created by getting the value of output per man- year in the previous year, increasing this by an estimated general productivity increase of 3 percent per man-year, and dividing a projected value of output per- man year.

Proportion	Employment Input Coefficients (32- sector/ industries)				Productivity (Gross Value Added) Input Coefficients (32- sector/ industries)			
	Bias	Variance	Covariance		Bias	Variance	Covariance	
SLQ	0.000	0.185	0.815	0.001	0.000	0.311	0.689	0.002
FLQ	0.000	0.237	0.763	0.001	0.000	0.310	0.690	0.001
CILQ	0.000	0.217	0.783	0.001	0.000	0.310	0.690	0.003
RLQ	0.000	0.190	0.810	0.112	0.000	0.407	0.593	0.005

Location Quotients	Employment Input Coefficients (32- sector/ industries)				Gross Value-Added Input Coefficients (32- sector/ industries)			
	Bias	Variance	Covariance		Bias	Variance	Covariance	
SLQ	0.00000	0.00021	0.00093	0.00114	0	0.000533	0.001178	0.00171
	0%	18.48%	81.52%		0%	31.13%	68.87%	
FLQ	0.00000	0.00014	0.00044	0.00057	0	0.000287	0.000639	0.00093
	0%	23.69%	76.31%		0%	30.97%	69.03%	
CILQ	0.00000	0.00024	0.00088	0.00112	0	0.000843	0.001879	0.00272
	0%	21.65%	78.35%		0%	30.97%	69.03%	
RLQ	0.00000	0.02121	0.09054	0.11175	0	0.002151	0.003134	0.00528
	0%	18.98%	81.02%		0%	40.71%	59.29%	

Comparison of Bias, Variance and Covariances

The results of the decomposition of the MSE are shown in the table above. In all LQs, whether created using employment or value- added data the covariance component accounts for the highest percentage of the MSE, and the bias section accounts for the lowermost percentage. This indicates that bias is not an important factor in the estimation error. Flegg and Tohmo (2013) showed that the covariance component captures the lack of a perfect correlation between distributions, and the variance component ascends when these distributions have various standard deviations. A reason for the greater performance of the FLQ is that it prospers in falling all the components of the MSE. Moreover, like Flegg and Tohmo (2013) results, this thesis also suggested that the main reduction was seen in the covariance component. Based on the procedures, it can be inferred that the core of the problem is the scarcity of the regional data when estimating LQs.

Conclusion:

Business planners and government authorities need regional data to create IO econometric models unswervingly and to recourse to indirect methods of approximation. A forthright and reasonable method to use regional and national sectoral employment, gross value- added or gross output figures

to calculate a set of location quotients (LQs). The primary focus of this thesis has been on the FLQ adjustment formula proposed by Flegg and Webber (1997), which considers the comparative size of a region openly into account. In this way, the FLQ pursues to diminish the strong upward bias in the estimated sectoral multipliers that embodies conventional LQs such as the SLQ and CILQ.

An effort in smearing the FLQ is the necessity to stipulate the value of an indefinite parameter, δ. Other survey-based, evidence on its possible value, is presented for Scotland by Flegg and Webber (2000) and for the Italian region by Bonfiglio (2009). Though, the overview of results got from a single region is always open to scrutiny, so our primary goal has been to deliver more guidance, drawn from a detailed examination of a wide range of regions of different size, on the appropriate value(s) of δ. The relative performance of the FLQ and other LQ-based adjustment formulae in estimating IO coefficients is the primary consideration of this thesis. It used a wide range of statistical standards to evaluate the results. In this thesis, it was able to suggest regional employment data as the most appropriate information in creating LQ approach, identify Flegg's LQ approach as the most efficient in estimating the 1994 Philippine Regional IO Coefficients, and Flegg's Location Quotient using Employment coefficients have the closest value towards the real regional IO coefficients in 1994. As anticipated, the FLQ outperformed the conventional LQs by an extensive margin, irrespective of which condition was used. This was true irrespective of whether one measured this match in terms of bias, variance or covariance.

In conclusion, this thesis has claimed of Flegg and Tohmo's 2011 statement that the FLQ can advance the approximation performance. Moreover, this has confirmed empirically that the Flegg and Tohmo hypothesis regarding the efficacy of the FLQ is therefore accepted. Though, this is not to say that the conventional FLQ procedure cannot be better. However, it is hard to see how an LQ intended from industry employment or gross output could deliver that kind of data – information that is someway richer than that used within the intermediate row and column sums of regional contacts.

<div align="center">Recommendations</div>

I. Utilize Regional IO Coefficient for Creating Overall Development Agenda:

The IO model starts with a supposition that external stimuli that may signify the main influences on economic activities. In other words, this assumes that the features of and circumstances present in the external environment govern the suitability of policies that are framed and executed in order for businesses to earn above-average returns and to accept strategies to meet the pressure while concurrently restraining the scope of strategies. It entails elements in the larger society that can directly and indirectly influence among government, industry and firms to jointly create a synergistic development agenda. The regional IO coefficients will help the government authorities to stipulate which industries would be capital or labor intensive in the long- run, hence may have more impact on

the government's business incentive and tax strategies and businesses' investment strategies in the medium to long- term. As most companies are contending in the industry or a particular industry segment of strategically relevant resources and thus pursue similar strategies. It is worthwhile to know that corporate planners, with a strong foundation on using regional IO coefficients, can create investment strategies in advance with other businesses to bring suitable returns and utilize firms' strengths to implement identified strategies. Moreover, as regional coefficients will determine the capital and labor intensity of businesses for expansion, it will be able to identify the internal resources, capabilities and competitive advantage. Hence, when combined, it becomes the so-called core competencies of the business. On the other hand, the use of regional IO coefficients can help the businesses interpret the possibility of getting corporate and income tax breaks or conditional relaxation of manning requirements given to high economic impact businesses by Philippine Bureau of Internal Revenue. It would not only decrease operating costs but also generates motivations towards corporate planners the proper use of regional IO coefficients. On the other hand, local government which uses regional IO coefficients could easily form the basis for its economic policies, find an industry with high potential for above- average returns, recognize appropriate strategy to encourage local businesses within the industry and boost their productivity.

II. Create a Comprehensive Factor Analysis of the Estimation Error

In the future study, it is strongly suggested to create a comprehensive factor analysis of the estimation error in order to deliver understanding into the additional growth of regionalization techniques for creating IO coefficients. It would be valuable to consider the geographical location of each region and the spatial distribution of industries. This research is fixated only on accuracy among LQ techniques. However, other non-survey methods also exist but comparing accuracies among these methods is necessary to inspect the pros and cons of each non-survey method.

III. Use FLQ in IO Creating Regional IO Coefficients in the Philippines

It is worth highlighting that, as with other pure non-survey methods, the FLQ can only be depend on upon to produce a satisfactory initial set of regional IO coefficients. Such LQ approach should always be assessed by the analyst on the basis of knowledgeable judgement, any accessible superior data, surveys of key industries and so on. Indeed, in the authors' opinion, the FLQ is very well suited to building the non-survey foundations of a hybrid model.

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A Fight for Inclusion:
An Analysis of Juvenile Delinquency in Low-level Secondary Education in Jamaica

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Abstract

This paper discusses how a lack of social inclusion in education correlates with juvenile delinquency. Normative conceptions of modern education paint a picture of a fair and inclusive merit-based system that offers students from all backgrounds equal opportunities for social mobility. These views contrast earlier theorizations of education as being a tool of capitalism, which exists primarily to reinforce existing inequalities. This systemic prejudice has been pinpointed as a rationale for delinquency in schooling; as it argued that marginalised students, being aware of their subjugation, stage a political protest by rejecting education. However, given the paucity of empirical data on juvenile delinquency in developing country contexts, a gap exists in our understanding of the phenomenon. Based on ethnographic data collected at a low-level secondary school in Jamaica, this study seeks to bridge this knowledge gap by critically analysing low-level students' schooling experiences against the backdrop of dominant policies and practices within their schooling. Based on the collected data, I argue that the current constitution of the education system is not inclusive as it does not adequately consider students' abilities, interests, potential or backgrounds, and ignores the realities of harsh schooling that students must endure. I conclude that juvenile delinquency is not youthful indignation to an education linked to capitalism, but rather a survival mechanism necessitated by systemic exclusion of low-level students within the education system.

Keywords: juvenile delinquency, low-level schooling, males, Jamaica, exclusion

1. Introduction

This paper discusses how a lack of social inclusion in education correlates with juvenile delinquency. Juvenile delinquency has severe repercussions for public safety and sustainable development and has been the subject of numerous studies and interventions across stakeholder groups. Research on juvenile delinquency has tended to be quantitative and has been useful in identifying risk factors such as parental incapacity, poverty, the influence of deviant peer groups, and more recently, the lack of social inclusion.

Social inclusion has been described in the literature as the incorporation of persons who sit on the fringes of mainstream society, offering them opportunities to overcome their marginalisation, improve their wellbeing, and lead worthwhile lives. Robo (2014) notes that in a socially inclusive setting, differences are respected and people feel valued, leading to a life of dignity and fewer unmet needs. Efforts to promote social inclusion may include the offering of free HIV treatment, the provision of free education for prison inmates, and the provision of health insurance for the poor (Agboti & Nnam 2015).

This paper uses the concept of social inclusion (or the lack thereof - social exclusion) to explore the issue of juvenile delinquency among low-level secondary school males in Jamaica, arguing that their delinquency, in part, amounts to a plea to be recognized, validated, and "included". The importance of social inclusion in education has

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been acknowledged by Jamaica's education ministry whose mission is to provide "quality care and education in an innovative, inclusive and enabling environment thereby creating socially conscious and productive Jamaicans". This mission is supported by the ministry's vision of fostering "...students who are literate and numerate, [and students who] realise and explore their full potential..." (Ministry of Education, Youth and Information 2019). The operationalization of these goals by public education institutions (PEIs) have varying effects on students but seem to be particularly skewed against low-level students from marginalized backgrounds. This creates an anomaly between the ministry's expectations of offering inclusive education and the realities of students' schooling experiences.

In light of this, this paper uses primary ethnographic data to critically analyze low-level students' learning environment in order to better understand their experiences and the resulting influence these experiences have on deviant conduct. The paper has two main objectives: (1) to describe students' schooling experiences, (2) to examine the imperatives of the education system, in general, and how they align with the values and identities of so-called delinquent youth. To do this, firstly, the paper discusses the harsh school environment that students must endure - one which often threatens their physical safety and emotional well-being. Secondly, the paper looks at how the education system has failed to reach low-level learners, recognise their potential and tolerate their differences. In this paper, I critically analyze the insistence on instilling dominant values in low-level students from marginalized or culturally divergent backgrounds, and the judging of low-level students' abilities using normative standards which, arguably, excludes them and fuels their involvement in deviant behavior.

This paper is divided into five sections. Following the Introduction, Section 2 reviews the existing literature on juvenile delinquency and social inclusion, and highlights the gaps that this paper will address. A more detailed description of the study's methodology is also included in this section. Section 3 gives an overview of the Jamaican education system, explaining schooling levels, matriculation, as well as the policy-making and oversight mechanism. Section 4 offers anecdotal evidence and analysis of the schooling experiences of low-level students. Finally, Section 5 summarizes the paper.

2. Theoretical Concepts and Research Methodology

In keeping with the definition offered by the United Nations in its 2003 World Youth Report, juvenile delinquency in this paper refers to the repeated violation of legal and social norms by young people (United Nations 2004: Chapter 7). As Bintube (2017: 12) points out, "all societies have certain norms, value, beliefs system, customs and traditions which are socially constructed and implicitly accepted by its members as conducive for their well-being and the sustainability of the ecosystem. Infringement of these cherished norms and customs is labelled anti-social; deviant behaviour and/or crime in some respects". Juvenile delinquency can, therefore, be seen as profoundly intertwined with deviance, and both terms are sometimes used interchangeably in this paper.

Much of the research done on juvenile delinquency has looked at the education system, with many scholars arguing that the system, under the influence of capitalism, exists primarily for the purpose of maintaining social structure and limiting social mobility. This, they argue, maintains class divisions and fuels class tensions (Bowles & Gintis 1976; Giroux & Penna 1979; Willis 1977). However, this critical view of the education system challenges normative perceptions of modern education, which is widely seen as egalitarian. Most studies on juvenile delinquency were conducted in the developed world (especially North America and Europe), meaning they are not

fully applicable to developing country contexts. Therefore, a country like Jamaica, which is monoethnic and middle-income, cannot thoroughly analyze its local situation by relying solely on existing studies.

Most studies on juvenile delinquency have been quantitative, and have sought to use survey data to identify risk and protective factors that correlate to delinquent conduct. Some of the more cited factors include race, gender, socio-economic and family background, literacy and school failure. The majority of these factors are associated with the "individual level", and can be linked to events occurring within the individual's life, personal sphere, and/or control. Qualitative studies have also explored the broader environment within which delinquency occurs and has ascribed as much blame to the structure (or system) as the agent. While acknowledging the usefulness of quantitative approaches, Smith (2000: 300) criticized the paradigm, noting that "quantitative researchers usually do not critically interpret school objectives, social interactions, or students' perspectives and agency". He called for more qualitative research at disadvantaged schools with large numbers of marginalized students as a rebalancing of positivism in juvenile delinquency research. Ilan (2007) agrees, arguing that mainstream approaches fail to recognize, consider or probe the actual experiences of offenders. He adds that ethnographic methods make up for this shortcoming by showcasing the social worlds of the actors and highlighting the meanings they attach to various phenomena.

This paper draws upon the work of social reproduction theorists, who have challenged the perception that modern education is meritocratic and class-equalizing. Bowles and Gintis (1976 cited in Hurn 1993), for example, have argued that schools are not neutral institutions that promote class mobility but rather devices used to replicate the values and attitudes that capitalist societies need. The authors make a distinction between schools geared at students from lower and higher socio-economic backgrounds, noting that the former tended to be strict about being on time, respecting those in charge, and following instructions, while the latter is usually geared toward flexibility, an ability to tolerate uncertainty and positive attitudes towards innovation and change. Collins (2009: 34) summarised this assertion, noting that "the basic reproductionist argument was that schools were not exceptional institutions promoting equality of opportunity; instead they reinforced the inequalities of social structure and cultural order found in a given country". This aligns with Bourdieu and Passeron's (1990) argument on "cultural reproduction", which they consider to be the primary role of the education system. Cultural reproduction involves reproducing the culture of the dominant classes, which have the power to legitimize their own culture and invoke a sense of superiority over other cultures.

A classic piece of literature that toes this argumentative line is Paul Willis' "Learning to Labor: How Working Class Kids Get Working Class Jobs". The book is based on Willis' investigation of a group of senior high school boys in the British midlands in the 1970s. The boys, who called themselves "lads," glorified manual labor (as opposed to white-collar jobs which they perceived as requiring formal education) as the epitome of masculinity and would take pride in provoking conformist students, opposing authority, smoking, drinking and skipping school. Willis described the boys' actions as a form of political protest of capitalism as evidenced by what Willis calls as a *counter school culture* (Willis 1977). In keeping with reproductionist arguments, Willis also believes that the boys' behaviors are attributable, to some degree, to the institutional "structure", or the education system. However, he added the perspective of the boys' agency, which he found to be influenced by the boys' milieu. He concluded that while the system might have been set up against the boys, their embodiment of anti-school behavior is what led to their failure. In other words, the system's design may have favored their failure, but they failed themselves by resisting an

education (Willis 1977).

Inclusion is another concept of relevance to this paper. Inclusion in education refers to action taken to ensure student comfort within the education system, regardless of their differences or peculiar needs. While early studies on inclusion used the term to refer to the integration of students with physical and/or learning disabilities (see Bossaert, Colpin, Pijl, & Petry 2013), more recent usage of the term includes reference to an education system that meets the needs of a wide diversity of students. These needs relate to academic competences as well as students' physical, social and emotional needs (Booth & Ainscow 2002). Based on the preceding, it is reasonable to conclude that social inclusion pivots on participation and involves being recognized as worthy and valuable, despite traits that may differ from dominant standards.

Robo (2014) notes that an inclusive education system works for all learners without sideling any particular individual or group, thereby promoting successful learning. An inclusive education system transforms itself to accommodate the diverse needs and profiles of learners. Robo (2014) highlights some initiatives that can lead to inclusive education, which include improving the effectiveness of teachers, promoting learning-centered methodologies and developing appropriate learning tools and resources.

A concept that emerged from the literature on social inclusion in education relates to students with special educational needs (SEN). These are students who find it considerably more challenging to learn when compared to students of the same age, or students who have disabilities that impede their use of educational tools and facilities customarily provided to students of their age cohort. For students with SEN, inclusion from their peers is crucial to their emotional security and can also be important in warding off physical attacks and bullying (Savage 2005). Therefore, for students with SEN, peer acceptance, friendships and perception of peer acceptance become crucial. Farrell (2000) adds that "for such children to be fully included they should take a full and active part in the life of the mainstream school, they should be valued member[s] of the school community and be seen to be integral members of it (Farrell 2000: 154)".

It can be argued that students at low-level secondary schools have SEN, as compared to the benchmarks set by the education system for literacy, numeracy, problem-solving and communication abilities, low-level students are below par. Based on the literature, a socially inclusive education system should, therefore, provide opportunities for low-level students, and indeed all students, to discover things they like and are interested in, form positive peer relationships that increase their sense of worth, find comfort and acceptance irrespective of their academic abilities and cultural backgrounds, and gain a positive self-image and outlook, thereby helping them to achieve their full potential.

It should be clear, by now, that social inclusion in education as a concept clashes with the theories of social reproduction (discussed earlier); the former purporting the liberation of marginalized students, and the latter suggesting the reverse. However, due to a shortage of empirical data, how this tension plays out in developing country contexts is not well understood. This is one gap that this paper's research helps to fill.

Willis' thesis presents yet another gap in our understanding of juvenile delinquency in developing country contexts as his study is quite dated, and was conducted in a multiethnic, industrialised setting and era when manual labour and the factory floor were staples of society. The empirical sections of this paper, therefore, will show how the experiences of low-level students in secondary education in Jamaica makes a stronger case for their exclusion, rather

than their inclusion, and how this corresponds to delinquency.

The study on which this paper is based was conducted over six-months with a group of eighth-grade boys at ABC High[2], a government-run low-level secondary school in Jamaica. The boys were selected based on a shortlist of students with behavioral issues obtained from the school administration. Ethnographic methods were used for data collection and included observation, participation, informal interviews (with students), semi-structured interviews (with teachers and staff), informal discussions with parents and guardians, and a makeshift experimental project. Data were also collected from social media and an internet-based messaging platform. While most data were collected from the core group of 13 boys, data was collected from the general school population (of about 1000 students) as well. This allowed me to investigate the boys' reactions to elements in the wider school environment, and not only within their peer groups. The 13 boys came from five different classes, comprising multiple peer groups. All names used in this paper are pseudonyms.

3. Harsh Schooling

Many of the students at the school I investigated are from families that range from lower to middle socioeconomic status, according to a confidential document I received from the school. The school serves families from several nearby volatile communities as well, which, according to the document, is a primary reason for students' maladaptive tendencies. Additionally, the school mostly caters to students with relatively low scores on their primary school exit examinations, meaning their academic competencies are relatively low. These factors pose challenges to effective teaching and learning; a fact regularly mentioned by teaching staff. A school official explained that:

> *Many students have challenges in the home and are low-level, so their performance and behavior tend to reflect this disposition. There are also several students that are affiliated with criminal gangs. The higher grades have more hardened students with greater exposure and involvement in criminal activities. However, while the lower form students are less exposed, many of them are in contact with criminal elements and are being molded to participate in criminal activities. The school environment can, therefore, be described as "rough".*

Over the course of the study, I spent hundreds of hours with students in this schooling environment. Based on my observations and interactions with the students, I can confirm that schooling is indeed "rough" for many students, who often have difficulty finding comfort at school. Key aspects of this discomfort include their experiences of violence, victimization, intimidation and humiliation. The courtyard is one of the main areas where students congregate, and so, in this section, I offer anecdotes that paint a picture of students' experiences in the courtyard. The courtyard here refers to the area outside the classroom blocks where students spend their breaks.

The courtyard truly comes alive at lunchtime. At the sound of the lunch bell, students rush out of their classrooms towards the canteen where they form queues to buy lunch tickets. The faster a student arrives, the faster he gets served, and the more free time he has afterwards. Students purchase boxed lunches and other food items (sandwiches, drinks, etc.) from the school's canteen and eat in the courtyard. Most students either purchase lunch or go without food as

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[2] ABC High is a pseudonym used to protect the school's identity

bringing lunch from home is cause for ridicule.

The courtyard can be described as a melting pot of students from various backgrounds. The mood is almost always cheerful and festive. The younger students (grade seven) often play dodgeball, tagged and other games, while the eighth graders congregate at their usual hangout spots, often engaging in boisterous conversations about various topics. Lower school students are not allowed to leave the school building during breaks, and since classrooms are locked by security guards during lunchtime, students are forced to spend the 50-minute lunch break in the courtyard.

3.1 Moments of Fame

The courtyard offers students opportunities to show their creative skills, which earns them instant attention, admiration and praise from friends. The courtyard is, therefore, a kind of stage where students can be validated by their peers. As I sat around observing students eat and interact, I heard a loud uproar in the male restroom on the A Block. Scores of students were pushing to get in, rendering the entrance impassable. A drumming contest was in progress and students were rooting for their favorite drummers. A blue plastic water drum was being used as an instrument and students were drumming in turns. The student with the "baddest [best]" style would get a lot of "forward [cheers]" from his peers. The cheers became extremely loud, eventually grabbing the attention of teachers. By the time I got to the entrance of the restroom, a teacher had come running and chased students out of the restroom. "I don't care what you're doing in the bathroom, get out now! Everybody out, out, out," she said. The students complied. A seventh-grade student whom everyone seemed to believe was the best drummer emerged from the restroom, and he and his friends were "fist-bumping" while they praised him. He was the undeclared winner of the contest. I struck up a conversation with him. "Soh a yuh a di star? [So, you are the star?]" I asked. He gloated with pride and nodded his head to indicate "yes". I asked why they chose to do it in the bathroom. One of the students told me that the teachers are less likely to intervene if they go into the bathroom. Another student could be overheard complaining that because of the drumming he got chased out of the bathroom although he genuinely wanted to use it. I asked him if he was not one of the drummers. "No Sir, mi just waa use the bathroom and dem bwoy yah a ramp [No, Sir. I just want to use the restroom and these boys are just playing around]," he replied. His peers seemed unperturbed and laughed wildly.

All seventh and eighth-grade students study music. So, couldn't the students drumming talent be expressed and honed in music class?, one might ponder. This is a possibility. However, like most academic subjects, the music curriculum is tightly structured and delivers content that will allow students to sit standardized regional exams. Therefore, there is little room to cater to particular talents or interests of students, like our star drummer.

3.2 The Hustlers

I walked by a group of boys flipping a bottle around. They were playing a kind of game in turns. A student holds the bottle by the neck, flips it towards himself and tries to make it land on its base without toppling. I stuck around for about three minutes before asking them what they were doing. The student closest to me said, "a gamble dem a gamble [They are gambling]". He was not playing at the time. "So tell me how you play it", I asked. He explained the rules to me as two other boys played. At that point, one of the boys had won the round, and following a small uproar, money was secretly handed over. The loser walked away, and the student who had explained the game

to me challenged the winner to a round. The winner asked how much he was wagering and they agreed to 50 Jamaican dollars ($50). They played, and the previous winner won again. The student who I had been talking to handed over $50. The winner smiled and started looking around as if he was recruiting new players. The loser, my new friend, decided to try again. I questioned his decision, but he was determined to get his money back, which he did. I asked him if he was not concerned that the teachers would catch them gambling. He said "no, we just tell them seh a play wi a play [No, we simply tell them we are playing]". He added that they would likely get in trouble if the teachers knew they were gambling. He continued to play for several minutes and was on a winning streak. I asked him how much money he had won and he proudly said "Mi have whole heap a money [I have a lot of money]", grinning uncontrollably. He then reached into his pocket and pulled out a wad of cash. He had a total of $850 of which $350 was won gambling.

While gambling is widely considered delinquent behavior, it is normal in some students' social settings. As one girl in a Health and Family Life Education (HFLE) class put it, "Nuttin doah wrong wid gambling. Mi gamble wid mi grandmother uppa mi yaad last week [There is nothing wrong with gambling. I gambled with my grandmother at home last week]."

There is also a black market, operated by students, for sweets and other snacks. Student peddlers have the opportunity to earn a substantial income as snacks are not sold on the compound and students are not allowed to leave the school building until the end of the day. Peddling is, of course, outlawed by the school and occurs in secret, even though some school officials are aware of the practice. One official told me they know it occurs, but due to the socio-economic status of some of the children, they feel compelled to turn a blind eye to it to not disrupt students' earning potential. The money earned becomes a status symbol and is used to enhance one's image of prosperity.

As I sat in the courtyard one day, a group of girls playing nearby engaged me "Sir, you see di girl just tek weh mi $400 dollars? [Did you see how that girl ran off with $400 of my money?]". I answered, "No, I was looking". "Yes Sir, she tek mi money [Well, yes, she took my money]" she continued. She then took out a wad of cash from her pocket and began counting it. There were at least three $500 notes in the bunch. I jokingly said "You're rich. Where you got so much money?". She told me she sold *bobby* (Jamaican chocolate candy) for $20 each and that was her earning for the day, as she gleamed with satisfaction.

3.3 Deceit and Shame

As described above, the courtyard is a fun and exciting place for many, and also offers students chances to earn, be it through gambling, selling wares or other means. However, it is also a place of discomfort and sadness for many.

During the lunch break, while I sat in Ms. Brown's office, a group of seventh-grade boys came in. One of the boys (Student A) began complaining that the other boys (Students B and C) were playing with his money, tossing it to and fro, and it ended up in another boy's hands, and he ran away with it. Students B and C began rebutting, adding that Student A was also engaged in the "play" and he is only complaining because his money was taken away. They added that the boy who took Students A's money is known to them, and Student A can easily get it back. Student A disagreed, saying that he was not playing and the other boys are at fault for making him lose his money. After a few minutes of back and forth, Ms. Brown began mediating. She asked the boys to all pitch in so the complainant could get his money back. Despite rebutting, they agreed, and Student B offered $50 towards the amount. Student C

claimed he had no money and so, Ms. Brown searched his pockets to verify before asking Student B to lend him $20 so he could contribute. Student B began to complain. He seemed as if he was about to cry, lamenting how Student A's dishonesty (considering that he knows the culprit) was now costing him money. Ms. Brown offered to retrieve the money from the boy who stole it and refund their contributions.

However, this situation did not have a happy ending as, perhaps, the boys had envisioned. While checking the pockets of Student B, Ms. Brown found a cellphone, which goes against the school policy. Despite Student B's desperate appeals for leniency, she confiscated it, and told him to collect it from the vice-principal at the end of the day. Student B mentioned that he would have to pay (a fine) to get it back. My checks confirmed that the fine is $500 and in some cases, only parents are allowed to retrieve cellphones.

It is precisely for reasons like these that students prefer to settle disputes on their own. Not only do they feel that they are always at risk of being labeled "weak" by their peers, but they also run the risk of being reprimanded by teachers in whom they seek refuge, for violations of school rules and policies. It is a slow process of discovery that students seem to master by the eighth grade. I seldom saw eighth-graders making complaints to teachers about troubles with their peers, even though incidents and conflicts among students were more frequent at the eighth-grade level.

The school environment described above runs contrary to normative expectations as students engage in activities that flout social norms. Students are also aggressive, sometimes violently so, and often disrespect authority. As also mentioned above, some of this behavior is reinforced and even promoted in students' social settings outside of the school environment. Therefore, students consider some of these behaviors normal. It is the imposition of rules and strict policies that might be foreign to many students.

Nonetheless, much of this is a matter of perspective. The hustler who illegally brings goods into the school building and sells for profit could be considered entrepreneurial and might be well suited for business development training. The delinquent gambler is perhaps a risk-taker who would possibly be poised for success in uncertain environments. Bowles and Gintis (1976) point out that these positive perspectives are standard in institutions geared at producing corporate executives, but noticeably absent in schools that cater to students from low socioeconomic backgrounds. Perhaps, the current education system does not allow schools autonomy to tap into the interests and natural tendencies of individual students, like the hustlers described above. This pitfall is compounded by the ideation of "full potential" that seems pegged to normative behaviors and achievement benchmarks. I argue, therefore, that in order to become inclusive, low-level education must move towards a model that defies dominant expectations of academic success, and aims to satisfy students' interests and talents. Such a model would corroborate Frederickson and Cline's (2009: 71) idea of inclusion. They point out that inclusion implies "the introduction of a more radical set of changes through which schools restructure themselves so as to be able to embrace all children".

4. The Classroom

As described above, students have many good and bad encounters in the courtyard that help to frame their experience of schooling. The classroom is another important dimension of the students' schooling experience. This section offers anecdotes from the classroom (including school-related policies) that help to characterize students' impression of schooling. In particular, I look at the practices of streaming, testing, and ranking of students, as well as

the insistence on the use of particular language to show respect. I will also describe and analyze the school's prize-giving and graduation policies.

4.1 Language and Respect

Jamaica's official language is English. However, a local dialect, patois, is widely spoken. Patois, or English creole, is an amalgamation of multiple languages that reflects the country's colonial heritage and African roots. Patois has long been considered dirty and uncouth, and was, until recently, associated with the lower classes (Wassink, 1999). Therefore, children are encouraged to speak standard English, especially in formal settings like a school. My data shows that most students are neither competent nor comfortable with using standard English and have grown accustomed to speaking patois, which in many cases, is widely used in their milieu.

A teacher related a story of an exchange between another teacher and a "disrespectful" student. The story starts with two students conversing about the news that a particular teacher would be leaving the school (resignation).

Student A: Yuh noh hear seh di short fat teacher a leff [Have you heard that the short fat teacher is leaving?]

Student B: Which teacher dat? Wha she name? [Which teacher? What's her name?]

Student A: Minno know but she use to teach wi last year [I'm not sure, but she taught us last year].

Student B: Mi hope a no da woman deh inno [I hope it's not the woman I am thinking of].

The teacher who overheard the students' conversation interjected, reminding Student B that referring to a teacher as "da woman [that woman]" was disrespectful. However, if we carefully examine the conversation, we see a discrepancy. Given that Student B is hopeful that the departing teacher is not the person she is thinking of, we can assume that Student B has some amount of affection or admiration for the teacher she has in mind and would regret to see her leave. However, the term "da woman [that/the woman]", is widely perceived as disrespectful in the Jamaican dialect, and ends up clouding the essence of Student B's utterance, as more emphasis was placed on the form than on the substance of the exchange.

In another scenario, Ms. Brown, a teacher, in mediating an issue involving a group of boys, asked one of the boys a question. He responded "how yuh mean" with a questioning tone. In the Jamaican dialect, this response means "Sure", or "I would not have a problem with that". Ms. Brown, however, scolded the boy for his improper language, which she perceived as disrespectful. "Boy, don't you dare talk to me like that. You do not answer an adult like that. Say 'Yes Sir' or 'Yes Miss'," she said.

These narratives show how pervasive the influence of the dominant language is and how oppressive the requirement to speak standard English can be, especially in a low-level setting where students do not master it and feel discomfort when forced to use it. Students must, therefore, be careful not to be flagged for "inappropriate language", even if such language is tolerated or promoted in their milieu.

4.2 Streaming, Testing and Ranking

The Ministry of Education employs a policy of streaming, whereby students are placed into one of three

"pathways", under the ministry's Alternative Pathways to Secondary Education (APSE) program. The issue of streaming is widely contested in the literature with proponents arguing that it gives low-level students a chance to learn in an environment that caters to their particular learning needs (see Fiedler, Lange & Winebrenner 2002). However, opponents of streaming insist that the practice excludes and subjects academically weak students to an inferior education (see Ansalone, 2003). This, they argue, affects low-level students' confidence.

Under the ministry's APSE program, primary school exit tests are used to determine a student's aptitude and corresponding "pathway." The ministry notes that "as … [students] progress, they are advanced to the suitable pathway based on their achievements" (Ministry of Education, Youth and Information 2017). However, the primary method of evaluating these "achievements", is also by way of standardized testing, which I found to be a major headache for low-level students, as shown below.

I co-invigilated an end-of-year English exam for one of the lower stream classes in the eighth-grade with Ms. Norris, a teacher at the school. About 15 minutes into the test, students became rowdy and several students began yelling "Sir" and "Miss", indicating that they needed assistance. In frustration, students banged on the desks and dragged their chairs noisily along the floor. Many their queries were basic, but loaded with signs of irritation and humiliation. For instance, "Sir, wha da word yah mean? [What is the meaning of this word, Sir?]", "Wha mi fi do ere soh? [What am I expected to do in this section of the paper?]", "Sir, minno understand da part ere [Sir, I don't understand this part]". Some students asked me to read questions aloud for them, as they shamefully admitted to their inability to read. As the exam wore on, students began talking openly with their neighbors, complaining aloud, hissing, standing up, throwing objects across the room, and asking to be let out for restroom breaks. Some students even began hitting others with rolled-up papers missiles and other objects. One student who sat at the back of the room had nothing written on his test paper. He looked quite perplexed, so I engaged him.

KW: What's the matter?
Student: Nuttin [Nothing]
KW: So why aren't you doing the test?
Student: Minno feel like do no test today [I'm not in the mood for a test today]

Ranking is another school practice that hurts low-level students. Students are ranked among their peers based primarily on the results of tests. As the ministry promised, a high rank gives a student a chance to move up to a higher level pathway. Therefore, being ranked first, second and third place in a class is considered outstanding and praiseworthy. However, as one's rank moves further away from the coveted top spots, praise gradually turns into condemnation. Interestingly, this condemnation often comes from parents, who bemoan the sacrifices they make to afford students an education. This explains why some students feel anxiety on "report day", when parents come in to collect student report cards and consult with teachers about their children's performance. One student told me "Mi doah even waa si mi report [I don't even want to see my report]", while another student devised an elaborate scheme, wherein I would collect his report in lieu of his father, from whom he wanted to hide his results.

As my data shows, streaming, testing, and ranking hurt low-level students, excludes them, and disregards the ministry's goal of every child achieving his/her potential. In light of this, I believe there is cause for consideration of

the extent to which the practices of streaming, standardized testing, and ranking are necessary or even appropriate, in low-level secondary schooling.

4.3 Not Good-enough: Prizegiving and Graduation

The school has an annual prize-giving ceremony where students are awarded for excellence. Prizes are awarded to students who have attained an average of 60% and over. Students can attain gold, silver or bronze awards based on their grades. Awards are also given for good behavior and participation in sports and other extracurricular activities. I asked John, a boy in my core research target group, about plans to attend the prize-giving ceremony.

> *KW: Soh yuh a forward tomorrow? [Will you be attending the prize-giving ceremony tomorrow?]*
>
> *John: No sah [No, I won't]*
>
> *KW: Why not?*
>
> *John: Wha mi a come fah?. Mi a tan a mi yaad. [What is the purpose of coming? I will stay at home]*
>
> *KW: Yuh have somen fi do a yuh yaad? [Do you have something specific to do a home?]*
>
> *John: No, but mi cyaa watch some netflix and play some xbox [No, but I can watch Netflix and play video games]*

John's tone suggested a lot more than disinterest and could almost be read as a kind of disdain for the proceedings. I soon discovered that none of his close friends would attend the ceremony and even though they all knew a few of their peers who would receive awards for athletic involvement, this did not sway them towards attending. In a low-level setting, achieving an average of 60% is no easy feat. Many students are unable to read; many can barely write; and many have severe challenges with mathematics and reasoning skills. The 60% requirement can, therefore, be seen as quite extreme.

The requirements for graduation are no less severe. In order to graduate, a student must have a near-perfect behavioral record (in the last year of school), which in a harsh school setting means showing tremendous self-restraint. Students who hope to graduate must also have five exam passes. This is quite difficult for low-level students since unlike school-administered tests that are set by teachers who can adjust the content to match students' abilities, the tests used to determine eligibility for graduation are standardized across Caribbean countries. Therefore, students are tested against the "smartest" in the region, and there is no room for consideration of their academic status.

The gap in performance between low and high-level students has been magnified by the recent trend of ranking schools based on the number of benchmark passes[3] obtained in regional exams. In 2018, Jamaica's top school received 100% benchmark passes, while the lowest-ranked school received 0% passes (Educate Jamaica, 2018). Given that a top-performing school is considered a "bright" school, and a low-level school, a "dunce" school, the repercussions transcend the schoolyard as students are judged by the public as they walk through the town in their school's uniform.

According to a school official, many students give up on the goal of graduating school from as early as the ninth grade, as they perceive their abilities to be too far below par. It is evident, then, that these policies and requirements humiliate and exclude students, many of whom never stood a real chance at graduating. Moreover, despite knowledge

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[3] A benchmark pass is passing 5 regionally administered exams which must include English Language and Mathematics.

of their low academic abilities, even at the time of their admission to secondary school, not enough provision is made to bring them up to speed or to create new criteria that would allow for fairer evaluation. Some may argue that sports and extra-curricular activities are means of recognition for which low-level students may qualify. However, not all low-level students are athletically inclined. Moreover, to suggest that academically weak students must resort to sports or non-academic means for recognition, would be equally exclusive.

5. Badman: A Tool of Inclusion

As shown, students in a low-level environment are exposed to various threats; to their physical safety (mostly at the hands of their peers) and their emotional security (at the hands of their peers and also through the policies and practices of the education system). In response, many students take on a *badman* persona that helps to buffer their humiliation and lesson their feelings of ineptitude. An example of the badman attitude comes from the student in the test (described above) who "didn't feel like doing the test". This response reminds me of another student's reply, a few weeks earlier, to his teacher asking why he had not done his homework. He said "Man a badman. Mi no do homework" [I am a badman. I don't do homework]. Billy, who was locked out of school for wearing inappropriate pants told me: "mi have pants weh mi cyaa wear inno, but mi nah wear dem [I have suitable pants that I can wear but I refuse to wear them]". "Why?", I asked. "Cos man a badman [Because I am a badman]," he replied.

From a student perspective, a badman does not have to do homework or tests, he does not have to wear the prescribed uniform, nor does he have to participate in class or show respect for authority. In a harsh school environment where victimization commonly exists, being a badman, becomes a handy survival tool. Whether it is rebuffing a verbal attack, defending one's property, or responding to a physical attack, being a badman helps. Being a badman also helps students escape classroom obligations such as homework and tests, without the need for any substantial justification; merely professing to be a badman is enough. Therefore, it is an easy way to protect one's pride.

The badman persona comes with requirements for dress and personal image. Badman students typically maintain a "clean and neat" look that involves the wearing of skin-tight pants, well-groomed hair, shaved eyebrows, and evenly toned skin. Smell is also essential and so students walk around with fragrances which they apply several times per day. The badman appearance and attitude correspond to the imagery emanating from the Jamaican dancehall, which is the contemporary face of Jamaican culture and is keenly adhered to by young people, especially those from marginalized backgrounds (see Bolton 2015; Cooper 2004). For badman students, headgear, handkerchiefs hanging from the back pocket, rolled-up pants feet, and spotlessly clean shoes are common trends. Furthermore, students expend much effort to preserve their look throughout the day, with many boys walking around with combs in their pockets and shoe brushes and shoe polish in their bags. These behaviors often conflict with school policies and students are regularly punished, including being denied entry into the school building.

For some students, this badman image emanates from their social environments. However, based on my interactions with parents, I discovered that, for many students, the badman values are not reinforced by their home environments, which led me to a key finding of this study; that many students use the badman image cosmetically to blend in at school. This is perhaps understandable in the courtyard as students want to feel valued among their peers, as mentioned above. This perception of peer acceptance is important to students' concept of inclusion and is

especially true for students with SEN.

However, being a badman also facilitates inclusion in the classroom. Badman students can match-up to "smart" classmates, who do their homework or "know all the answers" by piggybacking on their badman image. Badman students can project an image of unrestrained agency, suggesting that they "chose" not to do homework, or they "do not feel like answering"; in others words, they can, but they "choose" not to. This image of "can" is very inclusive for badman students and helps to cushion their humiliation in the classroom.

This interpretation offers a new perspective of delinquency that challenges Willis' assertions. Unlike Willis' boys who glorified factory work, resulting in an anti-school culture, the boys in my study do not use deviance as a political statement about the usefulness, or lack thereof, of schooling. Willis contends that his lads were no less capable than their conformist mates, which is in itself an element of inclusion. Their defiance of the system was, therefore, a product of their agency. In contrast, badman students feel excluded by the orthodoxy of schooling, which showcases their inferiority and resultantly taints their schooling experiences. Coupled with the numerous threats to their physical safety in a "rough" school environment, they rely on this delinquent alto ego for protection.

6. Discussion & Conclusion

The goal of this paper was to show how low-level schooling enables juvenile delinquency through policies and practices that hurt academically weak and culturally divergent students. In this paper, I argue that these policies have the effect of driving students away from normative values as they seek alternative means of accessing the mainstream of schooling. The study is based on ethnographic data collected from low-level students in a monoethnic developing country context and helps to fill a gap in the existing literature, which is heavily based on European and North American studies. This paper offers a new perspective to a central argument within the existing literature that schooling is a tool of capitalism that works to maintain class relations, and delinquency is a subtle resistance to that system of oppression.

This paper has shown that school policies sometimes come into conflict with low-level students, leaving them feeling humiliated. Policies regarding language, how to show respect for authority, as well as the long-standing practices of streaming, ranking and testing, while perhaps well-intended, have the undesired effect of tarnishing low-level students' schooling experiences. Prize giving and graduation also have exclusionary effects on low-level students who often "give-up" in frustration before reaching key milestones.

I have shown that students use the image of a badman as a kind of retort, which lessens their humiliation and helps them "match-up" to their peers, who by their academic performance or conformity are included in the mainstream of schooling. This matching-up counters their feelings of interiority and helps to lessen their exclusion. Undeniably, for some students the badman persona is entangled with the influence of their milieu. However, for many others, it is a cosmetic cover used to buffer embarrassment and victimization and to gain access to something mainstream within the school system.

While I agree with the ministry's goal of helping every child to realize his/her "potential", I argue that the rubric by which this potential is evaluated is too heavily reliant on dominant practices such as standardized testing, thereby causing it to be skewed against low-level students - leaving them excluded. I have also shown that cultural elements, such as language and codes of dress, that obtain in the students' milieu are often contested in their schooling, where

rules impose "strange" customs on many of them, again sidelining them.

I will admit that this paper is markedly critical of the education system, which I must state is not advocacy for lawlessness in schools. However, in keeping with the ideals of inclusion in education, which is an explicit goal of Jamaica's education ministry, I argue that the current state of low-level education causes considerable harm, and pushes many low-level students towards, not against, involvement in deviance. We must, therefore, assess various alternatives to current school policies if we hope to cater to the abilities, interests and potential of academically weak youth.

Admittedly, juvenile delinquency cannot be fully explained or justified based solely on this paper's arguments, especially given the strong influence of students' milieu on their behaviors, which was not explicitly investigated in this study. Nonetheless, this paper offers a new perspective which can enrich our understanding of delinquency among low-level secondary learners in a developing country context, and contrasts the view of delinquency as youthful indignation to capitalist-linked education.

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