

ACCESSIBILITY OF EDUCATIONAL SERVICES TO THE POOR IN THE NORTHERN REGION OF PENINSULAR MALAYSIA: A SOCIO-SPATIAL PERSPECTIVE

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ABSTRACT

In development discourse, the role of education is instrumental to assist the poor to break away from the vicious cycle of poverty. As a result, equipping a nation's citizenry with adequate education and knowledge will ensure their ability to be self-sufficient in terms of securing gainful employment and subsequently escape the vagaries of poverty. However, in both developed and developing countries alike, the supply and concentration of educational services and amenities in terms of their location, accessibility and quality tend to be biased towards urban centres as they are unevenly distributed between urban and rural settings. Concomitant to that, incidences of poverty will incline to occur and perpetuate in places and spaces that still lack such fundamental educational services and amenities. In turn, this situation will question the extent upon which a nation's educational aspirations, learning opportunities and knowledge development initiatives are underscored by contemporary development philosophies like "Inclusive Education" as well as "Education for All." Arguably, for a nation to be considered as fully developed, it will require equitable access of educational opportunities and fair distribution of educational amenities to citizens from all strata of society, especially the poor, deprived and marginalised regardless of location. Against this backdrop, this study aims to examine the location, concentration and distribution of education institutions vis-à-vis incidences of poverty in the Northern Region of Peninsular Malaysia. The study used Geographic Information System (GIS) and spatial analysis to map the spatial distribution and identify distribution of higher education institutions in the Northern Region of Peninsular Malaysia. The results indicated that some areas with high concentration of poor population have low accessibility to Higher Education Institutions (HEIs). The findings from this paper will contribute towards shaping pragmatic educational planning and development policies in Malaysia.

Keywords: *educational services, poverty, Malaysia, socio-spatial perspective*

1.0 INTRODUCTION

In recent decades, the role of education is gaining credence as the ultimate strategy to reduce and break away from the vicious cycle of poverty (van der Berg, 2008). As elucidated by

Human Capital theorists, arguably, higher levels of educational attainment will enable better employment opportunities and higher salaries/wages (Becker, 1994; Harbison & Myers, 1964). Hence, the purported positive relationship between educational attainment and its impact on individual as well as societal growth has moved the education agenda to the centre of policy circles in both developed and developing countries alike (Brown, 2001; Brown & Lauder 1997). However, recent deliberation on education has taken on a more social approach where elements of 'inclusion' and 'inclusive education' are permeating into the discourse. To this end, there is a need now for viable interventions to consider and include vulnerable and marginalized individuals or groups so that they are integrated into mainstream development (Terzi, 2014: 479). The triggering factor for inclusivity and inclusiveness is simply because the benefits of education are not being enjoyed by all in an equitably fashion. Different forms of inequalities exist and continue to persist as they are shaped by the social structures, past historical legacies and the politico-institutional framework that exist in a country and a society. Under such circumstances, inadvertently certain individuals and groups will become vulnerable beings who are marginalised and excluded from mainstream development. Some examples of vulnerable groups include women, children, minority ethnic groups and of course the poor.

In terms of education, literature suggests that the supply and concentration of educational services and amenities in terms of their location, accessibility and quality tend to be biased towards urban centres as they are unevenly distributed between urban and rural settings (Velga, 2009: 10-11; Fuente, Rojas, Salado, Carrasco & Neutens, 2013). Concomitant to that, incidences of poverty will then incline to occur and perpetuate in places and spaces where fundamental educational services and amenities are still lacking. Obviously, the question now is beyond the (economic) role of education in terms of its ability to uplift a person economically as a result of higher educational attainment and better employment opportunities. Rather, the pressing concern now is to understand the extent to which marginalised individuals are given ample opportunities and access towards gaining education. Without access to education, the aspiration of getting gainful employment later on in life will seem unrealistic. No doubt, for a nation to be considered as fully developed, educational services ought to be distributed fairly and equitably whereby citizens from all strata of society are given equitable access to education regardless of location. Better employment opportunities are indeed far-fetched if education fails to reach out and be accessible to individuals just because they are excluded socially and segregated spatially.

Taking heed of the above concern, this study explores this notion from a socio-spatial perspective by examining the location, concentration and distribution of education institutions vis-a-vis incidences of poverty in the Northern Region of Peninsular Malaysia. To date, there are many studies that are undertaken from purely geographical or social perspectives, but there is a dearth of research that attempts to explore these two interrelated disciplines in an integrated manner, especially in the context of developing countries (Fuente et al. 2013: 118). Therefore, this study attempts to fill this research gap by intermeshing geography (through the application of Geographic Information System or popularly known as GIS) and social aspects in order to explore and unpack the socio-spatial relations pertaining to accessibility of educational services to the poor in the Northern Region of Peninsular Malaysia. Simply put, this study engages GIS to dissect a critical social issue. No doubt that most of the time quantitative geography merely looks at location of activities and land use patterns. With the incorporation of social science, it advances the analysis a step further by considering and measuring the degree of injustice, equity or equality of distribution and concentration of spatial configurations (Moreno, 2007) (cited in Fuente et al. 2013: 118).

Given Malaysia's aspiration to be a full-fledged knowledge-based society, thus, producing the right quantity and quality of manpower is of utmost importance. To this end, ensuring that the nation has the requisite manpower at the higher education level is of paramount importance as highlighted in the recently published Malaysia Education Blueprint 2015-2025 (Higher Education). Indeed, having such a refined Government blueprint is commendable; but, more importantly, the emphasis should focus on how the broad aims and objectives can be translated into reality. This study is most timely given that it hinges on this overarching philosophy as the main point of departure.

Broadly, there are two research objectives in this study. The first one aims to administer GIS to map out the distribution and concentration of educational services and gauge their accessibility vis-a-vis their locations and distance to the poor. Second, the outcomes and implication from this study will contribute towards ensuring spatial equity in the distribution of educational services and opportunities. In turn, this will ensure that the tenets underscoring inclusive development such as inclusive education and inclusive society can be fulfilled by first putting into place inclusive forms of educational planning (Terzi, 2014). Specifically, this study will be mapping out locations of higher educational services in relation to the poor. This endeavour is deemed necessary given that previous findings have shown that there is a positive relationship between distance to the closest institutions and the way it shapes and influences the decisions of students to undertake post-compulsory education in England (Dickerson & McIntosh, 2013: 753).

In an overview, this paper is organised into five sections. After introduction, key literature related to education, poverty and development are reviewed and revisited in Section 2. A short account about the study area (i.e. Northern Region of Peninsular Malaysia) will also be discussed here. Section 3 briefly sketches out the methodology and the applicability of GIS in this study. Section 4 discusses the key findings and the final section concludes this paper by suggesting some pragmatic education and development policies.

2.0 LITERATURE REVIEW

2.1 Education – a way out of poverty?

The development discourse has been placed on a crossroads many times over. This is because defining the term 'development' is by itself a formidable and difficult task (Peet & Hartwick, 2009). Although development was once (in the past) measured and gauged based on the economic growth experienced by a nation, but this viewpoint has been contested in the last several decades. Advocates now lobby for non-economic motivations to be considered in order for development to become a more all-encompassing and multi-faceted concept. As Dudley Seers (cited in Todaro & Smith, 2011: 15) succinctly puts forth,

The questions to ask about a country's development are therefore: What has been happening to poverty? What has been happening to unemployment? What has been happening to inequality? If all three of these have declined from high levels, then beyond doubt this has been a period of development for the country concerned. If one or two of these central problems have been growing worse, especially if all three have, it would be strange to call the result "development" even if per capital income doubled.

Clearly, a nation cannot be considered as developed if incidences of poverty, inequality and unemployment are still prevalent. Poverty is certainly not a new development issue, and it can have a vicious and cyclic effect if not combated at the outset. The endemic effects of poverty are capable of plaguing any individual or household for many generations to come if not contained. To combat poverty, education has been identified and suggested as the ultimate panacea to break away from the vicious cycle of poverty (van der Berg, 2008). In line with related development theories such as Human Capital Theory and Modernization Theory, the role of education is the ultimate strategy based on the assumption that investment on education will boost private benefits and, later, result in societal benefits in an aggregate manner. Human capital proponents further argue that education can enhance an individual's capability and capacity to participate and contribute towards the development of a society (Becker, 1994; Abd Rashid, 2002: 103). In the process, it is widely claimed that the returns of investment increases when an individual's educational attainment rises in tandem. With higher education attainment, a person will be given more employment opportunities for better occupations and subsequently higher paid salaries/wages. The need for better and equitable employment opportunities becomes more important when a nation is embarking on its development trajectory to become developed. For example, Modernization Theory has purported that education is a viable tool to facilitate a society's transitional process to become a modern and developed society (Abd Rashid, 2002: 108).

2.2 Inclusive Education for All

To this end, terminologies like 'inclusion', 'Inclusive Education'¹, 'Education for All' and 'Education for Sustainable Development' are increasingly important and fast moving to the forefront of policy agenda in developed and developing countries alike (Terzi, 2014; 479). Clearly, the focus and target group(s) of these initiatives are individuals and groups residing at the margins or at the fringe of society in terms of their rights and accessibility towards proper education. Although the 1994 UNESCO Salamanca Statement emphasised inclusive education specifically in the context of special needs education for children with disabilities, but the entire notion of inclusive education ought to be conceived from a broader perspective to include also marginalized individuals from diverse backgrounds, beliefs, ethnic groups, locations and such. No doubt, broadening the conceptualisation of development is crucial to uphold the virtue that education has to be for all, in order for the above conceptual idealisms to be realised.

Broadly, the 'Education for All' movement launched by UNESCO, UNDP, UNICEF and the World Bank at the World Conference on Education for All in 1990 is a global commitment towards providing quality basic education for all children, youth and adults.² This movement is underscored by UNESCO's mission to advocate education as 'a fundamental human right' in the quest towards higher quality education and capacity-building of human capital. EFA has six internationally agreed educational goals of which Goals 3 and 4 are particularly relevant to this study. Both these goals highlighted the need for equitable access to education.

¹ Inclusive Education. Addressing Exclusion. (retrieved on 28 July 2015)(Source: <http://www.unesco.org/new/en/education/themes/strengthening-education-systems/inclusive-education/>)

² Education for All – History. (retrieved on 28 July 2015)(Source: <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-all/the-efa-movement/>)

No doubt, the accessibility factor is of paramount importance without which education will remain as an exclusive privilege to selected people and not to the masses.

Indeed, these theoretical notions will remain as idealistic and unachievable aspirations if the underlying tenets of development, such as holistic, integrated and sustainable development, are not considered in the process. On one hand, the importance of education is widely acknowledged to alleviate poverty and inequality. But on the other hand, how can poverty and inequality be reduced or eradicated if principles of inclusive and holistic development are not integrated in the development process whereby vulnerable groups are still being left out, marginalised and not integrated into mainstream development. To a large extent, accessibility factors and actual benefits trickling down to the masses are concerns that need to be fully understood and addressed. Therefore, development and all its manifestations should be inclusive and include all citizenry across society's strata regardless of place, space or location. The following section will dissect the meaning of inequality from a socio-spatial perspective with emphasis on the accessibility factor.

2.3 Distribution of educational services – dissection from a socio-spatial perspective

Undeniably, forces of globalisation have influenced, shaped and resulted in social differentiations in societies and across space. When viewed from a sociological perspective, socio-spatial segregation is a manifestation of social differentiation that illustrates the way social structure is distributed in the urban space (Velga, 2009: 10). Resultantly, social differentiation will cause two detestable consequences in the process, namely, 'social exclusion' and 'social polarization'. Generally, segregation will occur when access of education and knowledge exclude and fail to reach certain population (Velga, 2009). When discussed in the context of educational and knowledge outreach to the populace, unequal accessibility to educational services and amenities will further exacerbate social exclusion and polarization.

In turn, these issues bring to the fore the position and relevance of egalitarian principles such as equity, equality and spatial justice in planning the location of facilities (Fuente et al. 2013: 118). Though these three concepts share some forms of similarities but they should not be perceived as synonyms. As argued by Bosque (2004) (cited in Fuente et al. 2013: 118), 'equity' can portray itself as 'equality' but these two terms are not similar given that equity is often interpreted as 'justice, impartiality of treatment, opportunities.' From a geographical viewpoint, however, something is considered 'fair' if distribution among different areas is justifiable by its individual proportional difference, and in turn, these differences are agreeable by the population without creating issues and challenges. Whilst the notion of equality hinges on the premise that all citizens should be accorded the same opportunities towards social goods and amenities such as healthcare, housing and education, just to name a few. As reviewed in Section 2.2 above, individuals have their fundamental rights, and in this case, their rights to access to educational services. Notwithstanding, scholars acknowledge that the applicability of these noble notions can prove to be challenging and problematic in both social and geographical terms when both human and space are in fact different (Fuente et al. 2013). In addition, the concept of 'social justice' can be understood from two angles, namely, a situation that reduces differences among locations and distances; or a situation where the needed and desired opportunity is reached (Fuente et al. 2013: 118).

Based against these conceptual nuances on equity, equality and spatial justice, it is without doubt that delving deeper into socio-spatial inequality research is of paramount importance given that a growing body of empirical evidence seems to support the abhorrent fact that

spatial variation and inequality in terms of educational services are perpetuating. Worse still, past studies have shown that distribution and concentration of high quality education tend to be inversely correlated with socio-economic conditions whereby allocation of school resources differs systematically across space. It was also found that lower educational attainment in more isolated and marginalised areas are due to poorer distribution and allocation of school resources (Dickerson & McIntosh, 2013: 743). Specifically, Dickerson and McIntosh's study looked at how distance to the closest institutions shape the decision to pursue post-compulsory education in England, and they concluded that "the geography of education matters", whereby distance which affects accessibility, is still a key determinant to influence a potential student's decision to participate in post-compulsory education. For instance, their key finding reported that those who live within closer proximity (i.e. less than 2 kilometres distance) were 27 percentage points more likely to participate in post-compulsory education compared to those who stay more than 8 kilometres from an educational institution (2013: 754-755).

By the same vein, such similar scenarios and evidences are also captured in past studies undertaken in the context of socio-spatial inequalities of education facilities in Chile (Fuente et al., 2013) where educational services are unevenly distributed between urban and rural settings. Sadly, education (especially private forms) has been commoditized and commercialised due to the so-called dynamisms and equilibrium of free market. The outcome is far from desirable where quality (private) education is concentrated in urban centers where the middle-high socio-economic sectors dominate. This scenario is succinctly resonated by Pizzolato, Barcelos and Lorena (2004: 668) as follows, "*...serious problems of educational substandards remain not only in broad rural areas but also in the less modernized parts of the country as well as in the periphery of metropolitan areas.*" This phenomenon is also proven by Fuente et al's (2013) study in Chile where high performance, private schools are found to dominate urban areas whilst less advanced schools of public nature are situated in less urbanised areas where low income earners dwell. Similarly, such socio inequalities and socio-spatial changes are also playing out in Montevideo, Brazil (Velga, 2009). In developing countries, generally, the location of primary public schools is also experiencing some forms of socio-spatial inequalities (Pizzolato, Barcelos & Lorena, 2004).

2.4 Background on the Northern Region of Peninsular Malaysia

The Northern Region of Peninsular Malaysia comprises of the states of Perlis, Kedah, Penang and Northern Perak which forms the study area for this research project. (Refer to Figure 1.) This area is situated in the Northern Corridor Economic Region (NCER). The NCER is a government development programme with the aim to promote economic growth and elevate income levels through agriculture, tourism and manufacturing in the Northern Region of Peninsular Malaysia.

The Northern Region of Peninsular Malaysia has managed to significantly reduce the incidence of poverty. Table 1 below shows the poverty rate in these states as compared to the overall poverty rate in Malaysia. Between 2009 and 2012, with the exception of Perlis that has a poverty rate of 1.9, other states have managed to reduce their poverty rates to become lower than Malaysia's overall poverty rate of Malaysia. Although the incidences of poverty are low, these statistics illustrate the scenario at the 'state' level, which fail to capture any forms of variations at the 'local' level. There might be areas with high incidences of poverty but the phenomenon could not be portrayed at the reported scale.

Figure 1: The Study Area (Northern Region of Peninsular Malaysia)



Table 1: The incidence of poverty in the Northern Region of Peninsular Malaysia

State	Poverty Rate 2009 (%)	Poverty Rate 2012 (%)
Perlis	6.0	1.9
Kedah	5.3	1.7
Penang	1.2	0.6
Perak	3.5	1.5
Malaysia	3.8	1.7

(Source: EPU, 2013)

3.0 METHODOLOGY

The geographical aspect of this paper aims to examine the location, concentration and distribution of education institutions *vis-à-vis* incidences of poverty in the Northern Region of Peninsular Malaysia. By using Global Positioning System (GPS) and Google Earth software, the study identified higher education institutions (HEIs) in the study area and mapped those locations. These locations were then mapped into ArcGIS 10.1 software. Other spatial data such as roads and land use information were obtained from Alor Setar Project Office, Department of Town and Country Planning, Malaysia whilst sub-district data was obtained from the Geography Section, Universiti Sains Malaysia. Non-spatial data such as population figures (for the year 2010) was obtained from the Department of Statistics, Malaysia and poverty data was extracted from the *e-Kasih* database under the Prime Minister’s Department.

All spatial data was converted into ArcGIS database. The original *e-Kasih* database (containing poor households) was initially in Excel format, and it was reorganised and summarized to represent poverty rate by sub-districts. Poverty rate was mapped to represent poverty by sub-districts. Then, the data was mapped and overlaid with the location of HEIs in the study area. Near function of ArcGIS 10.1 was used to calculate distance from HEIs to the centre of each sub-district. In addition, the study also mapped the spatial distribution of HEIs in the study area by using Average Nearest Neighbour Index (ANNI). Then, NEAR function was used to calculate distance of HEIs to centroid of each sub-district.

As mentioned in the introduction, the novelty of this paper's methodology extends epistemological grounds by administering and intermeshing the scientific strengths of geography (through the use of GIS) and contextualising them within a pair of social lenses to dissect socio-spatial relations of the poor's accessibility towards educational services in the Northern Region of Peninsular Malaysia. The prowess of both these methods will extend epistemology by allowing us to comprehend and know the world around us (Neuman, 2011: 93) with regards to distribution of poverty and socio-spatial relations of the poor towards educational amenities. The following sections will discuss key findings from this study.

4.0 FINDINGS & DISCUSSION

The incidence of poverty for each state in the study area is quite low. Only three sub-districts in Perlis and two (2) sub-districts in Penang have poverty rate that is higher than that experienced by Malaysia, which is at 1.7%. However, it should be noted that the poverty rate was calculated purely based on poor households registered in *e-Kasih's* database which may not capture the overall picture of poverty in the study area. As discussed earlier, education is an important mechanism towards breaking the vicious cycle of poverty. In this regard, as Malaysia is moving towards becoming a high income nation, higher education attainment by Malaysian citizens should be the main target. To this end, this study has endeavoured to investigate accessibility of HEIs to the poor in the study area. There are 110 HEIs, which can be categorised as public university, private university, technical college, teachers training college, community college and health training college, in the study area (Refer to Figure 2b). The location of these HEIs is clustered where the ANNI calculated is 0.445 which indicates a cluster distribution. These clusters are centred near major urban centres such as George Town and Butterworth in Penang State, Alor Setar and Sungai Petani in Kedah and Kangar in Perlis. It should be noted that the location of public HEIs in Malaysia was based on top-down decision making (Samat, 2002), which was in many cases planned to act as an engine of growth within the surrounding region (Ehinmowo & Eludoyin, 2010).

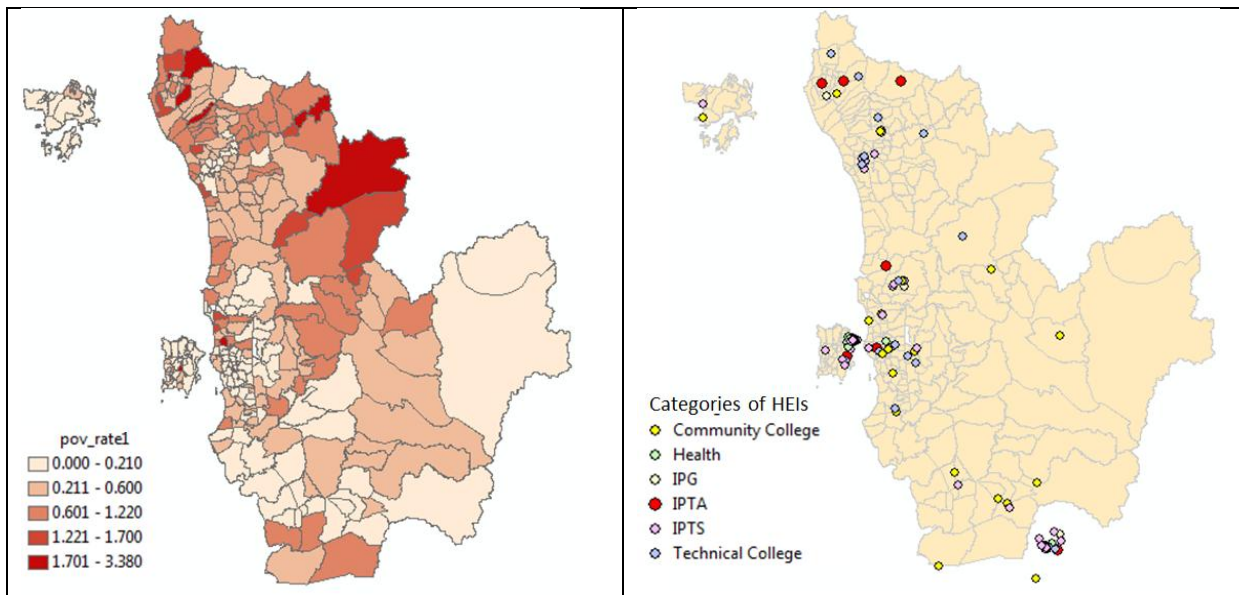


Figure 2a. Incidence of poverty by Sub-districts Figure 2b. Clusters of HEIs

Subsequently, this study calculated the distance between HEIs and the centre of each sub-district in the study area (Refer to Figure 3). Figure 3 shows that a few sub-districts were located quite far (between 28 km to 55 km) from the nearest HEIs. Although this study cannot be used to make any association between physical accessibility and the lack of accessibility to obtain higher education qualifications, the maps derived from this study showed that the sub-districts that are located far from urban centres have less people with higher education qualifications and high incidences of poverty as indicated in Figure 2a. and Figure 2b respectively.

The location of HEIs was clustered near existing urban areas which have better facilities and resources. The concentration of HEIs near existing urban areas has unintentionally marginalised the rural areas. because the presence of HEIs will influence regional economic development (Ehinmowo & Eludoyin, 2010). Furthermore, HEIs can make active contribution to the development of the region, where the regional availability of knowledge and skills become as important as the physical infrastructure. Therefore, the present of HEIs within the region can become a key asset and motivating force for economic development (Chatterton & Goddard, 2000). In addition, the spillover effect from the existence of HEIs can create more jobs and provide social opportunities to the communities. Ehinmowo & Eludoyin (2010) also indicated that the location of public and private universities in the region could enhance rapid development of such areas socio-economically. Additionally, it will create employment opportunities for both skilled and unskilled labour, and increase various land use activities. As indicated by growth pole theory, economic development never occurs uniformly over space but tends to concentrate in certain areas. The location of the HEIs, therefore, will act as growth centres of the region which in turn bring economic benefits to the communities (Samat, 2002).

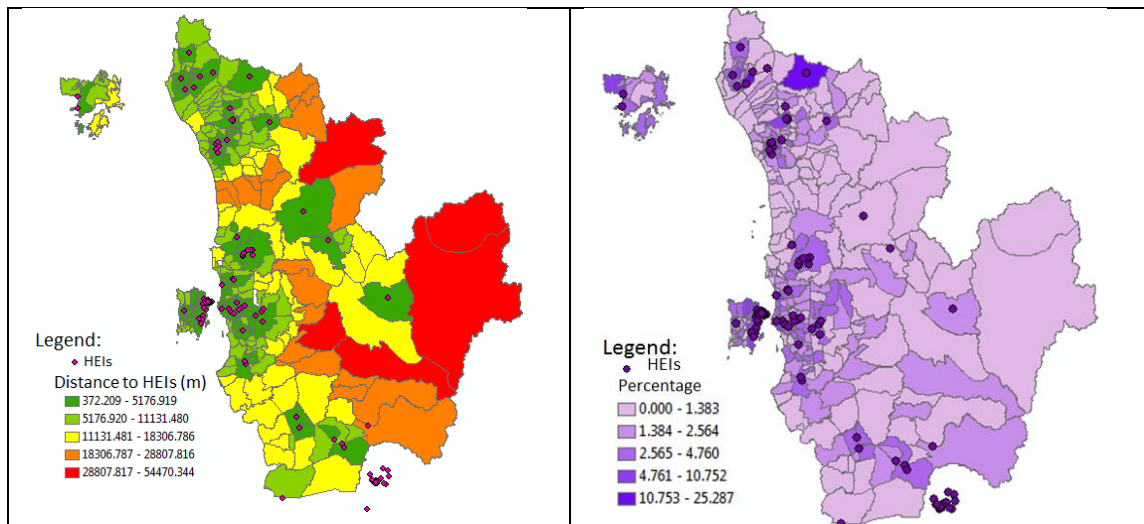


Figure 3a. Distance from HEIs to sub-districts

Figure 3b. Percentage of population with higher education qualifications

5.0 CONCLUSION & IMPLICATIONS

In Malaysia, efforts towards poverty eradication have been at the forefront of national policy agenda for many years. No doubt, positive outcomes have been observed when the number of poor Malaysians has successfully been reduced. But the national statistics on poverty are not without shortcomings. To date, the statistics shown at the national level is unable to capture variations and unequal distribution of services, particularly education accessibility. As indicated in this study, HEIs are still clustered within major urban centres, thus, making these (urban) HEIs less accessible to those in rural areas who incidentally also fall under the poor cohort. Given the uneven distribution of HEIs that is skewed and biased towards urban areas, in turn, this spatial inequality and unequal educational opportunity have hampered existing strategies and policies to foster economic growth and elevate the income levels of the poor. To address this problem, proper spatial and educational planning should go towards reducing uneven distribution and concentration of HEIs by redistributing and locating them in remote areas to ensure equal opportunity and accessibility to Malaysians from all strata of society.

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