

**University as Regional Development Agent: A Counterfactual Analysis of an
African University**

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Abstract:

The contribution of universities to regional development has in the last few decades gained significant currency. Inter alia, this contribution has been through steered national, regional, and institutional policies aimed at enhancing national development, good governance, human capital creation and innovation in an increasing knowledge-dependent economy, and through the universities' core technologies of teaching and research.

Based on empirical findings from an African case study, this paper argues that other forms of contributions to regional development exist, which are neither from deliberate efforts nor steered by direct policies. This article proposes new forms of contributions termed 'unintended contributions', in which universities become growth poles by virtue of being located in a particular region. Using the counterfactual and 'export and import substitution' methods of analysis, this study shows the various ways in which a rural university in Cameroon has 'contributed to regional development as a 'growth pole'.

Introduction

The contribution of higher education institutions (HEIs) to the development of regions in the last few decades has received significant interest from governments, regional development agencies and funding bodies. Studies reveal that universities provide significant economic and social benefits for regions (Pinheiro, Benneworth, & Jones, 2012; Carroll & Smith, 2006; Goldstein & Renault, 2004; Goddard & Puukka 2008). Universities in the African region have also come under increasing demand to respond to the development needs of their regions (Sawyer, 2004; Wangenge-Ouma & Fongwa, 2012).

Historically, African universities were established as developmental institutions – their primary mandate being to assist the new postcolonial polities to modernise, expedite person power formation, and also address basic existential challenges faced by the populations (Assié-Lumumba, 2006; Court, 1980; Ajayi, et al., 1996; Yesufu, 1973; Wangenge-Ouma, 2008; Mamdani, 2008). However, shortly after the establishment of universities in post-colonial Africa, claims emerged about the apparent disconnect of these institutions from their immediate environments (Ashby, 1964; Wangenge-Ouma & Langa, 2010; Sherman, 1990). Over time, African universities have been urged to become more relevant to their communities and regions. An instrumental view of universities has therefore always characterised African institutions of higher learning (Court, 1980; Wangenge-Ouma & Fongwa, 2012).

However, this instrumental and utilitarian view of African universities held especially by governments, funders and international agencies, seems to have existed always in tension with a rather elitist, ivory tower view by universities (in some cases also by governments themselves). As this study will show, African universities are not entirely to blame for this elitist self-view. In most cases, the establishment of these institutions

was very elitist in nature (Ashby, 1964). Further, we argue that African universities have generally not been adequately steered or incentivized to engage with their communities and regions. This study's key claim is that, notwithstanding the lack of policy environments and incentives that steer universities towards their regional relevance, they have, anyhow, made a contribution to regional development, mainly as growth poles. This claim is however limited to our case study, the University of Buea (UB) in South Western region of Cameroon. The university's contribution to the region's development however, is not primarily through its key core functions of teaching and research but rather 'unintended' – mainly by virtue of the university being located in the area.

The mandate of HEIs in Africa – some tensions and contradictions

The majority of HEIs in Africa were created in the early 1960s when many African countries attained independence. These institutions were established, in most cases, as satellite institutions of universities in former colonies, with the main objective of training the emerging political elites. Assié-Lumumba (2006) argues that, though HEIs were created to attend to social and economic development, as well as nation-state building, early institutions struggled between “the actualisation of their European medieval roots and colonial foundations and the African history and present-day social structures”. In other words, most African HEIs tried to situate themselves in line with their European ancestors at the time of creation while also struggling to reflect the African needs which they were supposed to address. This position greatly limited the impact of the African university in local, regional and even national development. Yesufu (1973) clearly maps these tensions whereby the political leadership sought to steer universities towards solving the existential challenges of the population, engaging at the grassroots level; while the universities regarded themselves as elite institutions

concerned mainly with knowledge production and research - even though little research happened.

Two other events in the history of African higher education provide a useful understanding of the trends and tensions in responding to national and regional development needs. First, there was the declaration of the Development Decade by the United Nations in the 1970s. This brought forth a shift of primacy from physical capital to the education and training of the working population with the argument that “an educated population is a productive population” (Olaniyan & Okemakinde, 2008:158). This notion was supported by the dominance of the human capital theory at the time. However, the centrality of the African university to national and regional development was severely undermined by flawed World Bank commissioned studies on returns to investment in education. The World Bank’s interpretation of these studies’ findings was that higher education was not a necessity for Africa’s development due to the low rates of returns as compared to primary and secondary education (Psacharopoulos, 1988). The findings significantly undermined the notion of the ‘developmental university’ with primary and secondary education promoted at the cost of higher education. Among the consequences of the fall in funding for higher education was that many African universities focused mainly on organisational survival. Notions such as regional engagement were unheard of, and universities focused mainly on teaching.

The University of Buea and the study area

The University of Buea (UB), located in South West region of Cameroon, was established in 1993 when the Advanced School for Translators and Interpreters (ASTI) was upgraded into a fully-fledged university. The university started with a student population of 1978, growing to about 12000 in the 2013/2014 academic year. The South

West region of Cameroon is one of the two English-speaking regions of the country's ten regions. The university is specifically located in the Buea Municipality, in the Molyoko area. The Buea municipality is a semi-urban setting with agriculture as the major economic activity. The town has grown rapidly in population in the last two decades from about 30,000 to about 200,000 people (Buea Municipal Council, 2014). The examination of the university's socio-economic contribution to regional development was limited to the Molyko area, the university's immediate neighbourhood.

Theoretical perspectives

This analysis is guided by the growth pole theory whose application has hitherto been mainly limited to regional development. As argued by early proponents of the theory, the growth pole theory assumes that growth does not appear everywhere at the same time, but it manifests itself in "points" or "poles" of growth (Perroux in Gantsho, 2008).

A growth pole is observed to be formed when an industry (the University of Buea in this case), through the flow of goods and incomes which it generates, is able to stimulate the development and growth of other industries related to it; a concept referred to as 'technical polarisation'. Gantsho further argues that this industry might as well be able to determine the prosperity of the tertiary sector by means of incomes it generates resulting in what is also referred to as income polarisation, or to stimulate an increase of the regional economy by causing a progressive concentration of new activities referred to as psychological and geographical polarization (Gantsho, 2008). Hence the socio-economic transformation of the region from a rural to urban or semi-urban setting, which can in turn start to export development to other rural areas through satellite growth poles.

Hitherto, most of the discourse on growth poles has been limited to industrial regions and their capacities to transform rural and peripheral regions (Waugh, 2005). The application of this theory in higher education studies reveals that universities have a similar capacity as industries, and even possess an added advantage of serving as growth poles in regional development due to the human capital produced as well as formal and informal knowledge exchange with their regions. Studies of university institutions in regional development (Carroll & Smith, 2003; Bridges, 2006; Goddard & Puukka, 2008) have revealed that the presence of universities has been critical to trigger and sustain regional economic growth.

The growth pole theory also highlights the fact that the university/industry and society interaction most often is not a deliberate or policy driven initiative. The use of the growth pole concept to understand universities' contribution to regional development presents a significant contradiction to what could be considered a classical route of universities in regional development: which should be an institutional steered policy-approach.

A critical review of the role of HEIs in regional development reveals that most higher education institutions have contributed to regional development steered by clearly defined policy. Vivid examples of such policies in the United States of America include the Morrill Act of 1862 and 1890 which ushered in the formation of Land grant universities (McDowell, 2003); the Bayh-Dole Act of 1980 enhancing intellectual property rights (Nelson, 2001); the Alvey Programme in the UK (Geuna & Muscio, 2008); and the regional universities in Norway (OECD, 2006). The next section presents the case of the UB. Though not steered by any policy framework, evidence reveals that it has been a significant agent in the socio-economic development of the Buea region.

Methodology

The counterfactual method for impact analysis was applied in this study. As explained by Siegfried et al. (2007), this method describes how better-off the area and its residents are with a HEI than it would be in its absence. In this context ‘better-off’ has been defined on the basis of higher employment opportunities offered, tax revenue collected by the local municipality, economic activities, and infrastructural and social development of the region. This technique eliminates the double counting of impact studies while also not including economic and social development which will have been in the region even if the university was not there (Siegfried et al., 2007). However it does not include multiplier effects in its analysis as other methods do (see Carroll & Smith, 2006).

Methodological weaknesses identified in the counterfactual technique point to the fact that there can hardly be an all-or-nothing rule in such analysis. While Siegfried et al (2007) in their study consider the incremental investment as relevant; the present study uses the technique to gain a descriptive understanding of the contribution of the UB in the economic transformation witnessed in the municipality. In this study, three townships (A township in this study refers to a small town in a rural district) were considered in the process of data collection and analysis to understand, using the counterfactual method. These townships include Molyko where the UB is located, Bomaka and Muea, which are both neighbouring towns. The counterfactual seek to understand, if and to what extent, some of the perceived economic growth of Molyko can be attributed to UB’s presence in the area.

The counterfactual method of analysis makes the assumption that from the outset of the processes prior to the establishment of the university in the region; all the three different

localities under study were at the same level of economic growth and development. Due to the absence of data, which is a major challenge in most developing economies, economic data from the three regions prior to the establishment of the UB was not available. However, a proxy for this comparison can be obtained from Figure 5 below, which shows the infrastructural development in the neighboring regions over time. It can be observed from the figure that, in the early 1990s Bomaka had more infrastructure development per quarter than Molyko, while Molyko was just slightly more developed in its infrastructure than Muea. Using this assumption, it is argued that the main difference in the level of economic growth between the university town and neighbouring communities can be strongly attributed to the presence of the university in the municipality.

Building on previous impact studies of universities' contribution to regional development, Pastor et al (2013:562-563) in a study in Spain, argue that similar studies usually “make some sort of occasional assumptions about the values of certain variables when there is uncertainty”. This produces sensitive results based on the assumptions made. They however propose the inclusion of “additional information about the uncertainty variable, based on empirical distribution”. In this study, the use of triangulation and qualitative interviews seeks to provide some of this additional information about the state of the three regions prior to the established of UB and the perceived impact of the UB in regional development.

The export and import substitutions analytical technique for impact analysis has also been used to understand the contribution of out-of-town students as well as visitors in the development of the municipality. As argued by Siegfried et al. (2007), the economic impact of students in a rural or peripheral region with a single peripheral university as in the current study is two-fold: The first impact is obtained from students who come from

out of the University Township or region and hence bring in revenues to the region through expenditures in the region. This financial inflow has been termed ‘exportation’ of higher education to the regions from where the students originate. The second impact has been termed ‘import substitution’, which refers to local students who would have gone out of the region in search of higher education and in the process taking revenue from the region to spend in another university town. Siegfried et al (2007) argue that for a region with more than one university, it becomes difficult to know which student would not have been in the region. However, with the UB being the lone university, the Buea municipality benefits from both returns of exportation and import substitution of higher education and makes the tool appropriate for use in this study.

The counterfactual, and export and import substitutions analytical techniques were complemented with interviews with UB’s leadership including deans, vice deans, heads of departments and programme coordinators. A second set of respondents were Buea Municipal Council officials, the leadership of major stakeholders such as the South West Development Authority (SOWEDA), the regional Delegation for Rural and Community Development, the Franco-Cameroon Alliance (mostly known by its French acronym AFC), the German-Cameroon Technical Cooperation for Development (GTZ), and the Buea Out-Reach Program – a non-profit organisation committed to the advancement of rural women. Key individuals who have lived or operated in the Buea municipality for at least ten years were also interviewed.

A structured questionnaire was also administered to 400 UB students. The choice of the students as respondents was mainly to gain insights into the students’ and their visitors’ expenses in the region the ‘export and import substitution’ impact of the UB in the region as seen from the number of students coming from other regions to study at UB as well as local students who would have gone to study in other regions, and lastly the

concept of graduate retention and the economic activities of the students in the region, and their views of the role of the UB in the development of the municipality.

UB's contribution to economic development

The contribution of the UB to economic development is discussed under the following aspects: (a) business attraction into the region; (b) job creation; (c) students' and visitors' expenses in the region; (d) revenue collection; and (e) human capital development.

Business attraction into the region

Interviews with entrepreneurs to enquire about the factors which influenced the establishment of their businesses in Buea and the Molyko Township where the university is located reveal that about 75% of the entrepreneurs attested that the UB was a key pull factor for their location in the area (Figure 1). Respondents attested that the UB population, viz. staff, students and visitors, constituted more than 80% of their clientele, which implies, business in the area was significantly affected during university holidays and breaks.

Figure 1: Business owners' perceptions of UB's contribution to local economic development.

Figure 1 reveals that the UB, without any policy steerage or deliberate effort towards regional development, has been a critical factor in the location of business to the local municipality. Of significant interest is the level of dependence of these businesses on university staff and students as a market and how much they are affected by university breaks and holidays. Thus the university provides a ready market for local enterprises through the presence of staff, students and visitors.

In the application of the counterfactual analysis, two neighbouring areas were included; the Molyko Township where the university is located and Bomaka Township a few kilometers from Molyko. From some key informants, there is a level of consensus to support the argument that these two townships were at a similar level of economic growth prior to the creation of the university. Key business activities in the region were identified and sampled in the university area as well as the other two selected regions which could be referred to as controls.

Tables 1 to 4 below present the results of the counterfactual analysis.

Table 1: Count for economic activities in the University Township (Molyko Area)

Table 2: Counterfactual count for Bomaka Township (Control 1)

Table 3: Counterfactual count for Muea Township (Control 2)

**Table 4: Difference in Number of Businesses in University area and the Control areas:
The Counterfactual**

Analysis of the data presented in the tables above reveals that there is a minimum total counterfactual of about 716 additional business activities when comparing to Muea and 807 when comparing to Bomaka. This can be strongly attributed to the presence of the university in the region. Linked to the number of businesses is job creation. A counterfactual analysis conducted to determine the university's role in job creation showed that about 2800 jobs were created by the businesses attracted to the area by the university (Fongwa, 2010:103). Due to limited time and resources, a detailed counterfactual could not be done in the control region. However, this finding is interesting in the sense that, unlike in other studies of universities' contribution to regional development the jobs created in this study are mainly menial jobs for basic sustenance compared to high skilled jobs linked to research and innovation arising mainly from spin-off companies (O'shea et al., 2007). This presents a different kind of economy, with different contextual dynamics, but still enhancing regional development. Unlike research intensive universities such as those in the MIT region (Simha, 2005), UB has not generated university startups and patents. The university has unwittingly facilitated job creation by offering a large and immediate market through students and staff. This makes the job market even more accessible to the local economy.

Student and visitors expenses

An analysis of the student questionnaire data on average monthly student expenditures revealed that about 42% of the students spent between US \$50 to US \$100 per month. The data also reveals that about 22% of the students spent less than US \$50 a month, while slightly more than 20% of the students spent above US \$150 per month. This estimate is done based on the export and import substitution approach adopted by Siegfried et al. (2007). They argue that "the extent to which colleges and universities attract outside money to an area, or prevent local

students from going abroad depends on both the origin of their students and what the students would have done if the college had not been there” (ibid:548).

The notion of ‘export and import substitution’ as used by Siegfried et al. (2007) presents an argument that a region with a university benefits about twice as much as a region without a university. The first economic benefit which is referred to as the ‘export’ is observed as students from other regions migrate into the region for higher education studies they bring money and resource. Hence, the UB region is seen as receiving (the exports of) higher education students from other regions. The second notion, ‘import substitution’ sees a positive benefit in the fact that a significant number of local students in the university region do not have to go to other regions to acquire higher education. Hence, all the resources which should have been spent while studying in another region are ploughed back into the local economy. Data from the student survey reveals that more than 97% of the students originated from outside the Buea municipality; hence, the municipality through the presence of the UB is a huge exporter of higher education to other regions, bringing in revenue into the region.

Municipal Revenue Collection

The increase in business and economic activity in the municipality has been observed in the amount of revenue collected by the municipal council over the years. Figure 2 presents evidence of a steady growth in revenue collected by Buea Municipal Council from 1994. Although it cannot be clearly demonstrated that this has been caused by the creation of the UB in 1993, the argument is that, with everything being equal, the presence of the university has been a significant factor in the increase of Buea municipal revenue which can be seen to coincide with the 1993 creation of the university.

This view was supported by the municipal treasurer who attested that:

the presence of the University has significantly increased business and economic activity in the municipality and especially in Molyko where the students are concentrated and where business is more and more active.

Figure 2:

Revenue Collection by the Buea Municipal Council (1991-2008)

Though there are two missing points on the graph, two arguments could be made for the UB's contribution to economic development. The first being the fact that revenue collection started increasing steadily after 1993 which coincides with the creation of the UB. This increase was sustained for almost five years, before the active volcanic eruptions of the Cameroon Mountain (at whose base the university is located) in mid-1999 which can be strongly attributed to the decline in economic activities as many people left the town and student numbers also declined. Secondly, the linear trend provides a steady overall increase in revenue collection with a steeper gradient post 1996 indicating that the presence of the UB could be making a significant contribution towards this increase.

Human capital development

As a university, the UB's key mandate is human capital formation. Our interest was on the extent to which this human capital formation benefits the local area in terms of students choosing to work there. Figure 3 presents students' views regarding remaining in the municipality upon graduation.

Figure 3: Human capital retention in the Buea region

Respondents from the municipality (the Secretary General and Works Department) agree that the university has been a major agent for the training of their workers. Most of the staff of the municipal council have been to the UB for short-courses. The council respondent also attested that students from the UB have been important when they come for academic internships as they add more value to the Council. Being the only English speaking university in the country for about two decades, the UB has significantly contributed to the production of the majority of English speaking graduates who currently work in different sectors of the local, regional and national economy. Interviews with bank managers in the municipality revealed that more than 60% of local banks and financial institutions in the municipality have at least one employee who is a graduate of the UB.

Social Contribution

The university's social contributions are discussed in terms of (a) infrastructural development, and (b) social facilities and amenities.

Infrastructural development

Considering infrastructure as an integral part of economic and social development, the Buea municipality has witnessed a sharp increase in its infrastructural makeup. Data obtained from the Regional Delegation of Town Planning and Housing which runs from 1980 to 2005 indicate that prior to 1992 there was a constant fluctuation in the number of approved building plans in the municipality. However, the following years witnessed a sharp increase in approved building plans. This also seem to coincide with the establishment of the University of Buea as the then Buea University Centre is transformed into a fully-fledged university.

Figure 4: Bar Chart showing the number of approved building plans in the Buea Municipality (1980 – 2005)

Detailed analysis of infrastructural development presents a stronger argument for UB’s role in these trends as Figure 5 shows that the increase in infrastructural development is highest in the Molyko Township where the university is located. Figure 4 shows a constant increase in the number of approved building plans in the municipality after the creation of the University in 1993 while Figure 5 shows that most of these building plans were approved in the University Township (Molyko), hence revealing a close link between rapid infrastructural development and the creation and establishment of the university.

**Figure 5: Infrastructural Development per major Townships in the Buea Municipality
(1990 – 2001)**

Figures 4 and 5 provide a strong argument that the rapid increase in the number of building plans after 1994 is a result of what was actually happening more in the university township than in the whole municipality.

Social facilities and amenities

Another contribution to social development associated with the presence of the UB is social facilities. A quick comparison of the different social facilities in three different Townships in Buea municipality (Table 5 below), reveals that the Molyko Township in which the UB is situated has a significantly high number of social amenities as compared to neighboring Townships. As already mentioned, these three townships are believed to have been quite similar in development status prior to the establishment of the UB in the Molyko Township.

Table 5: Social facilities in Three Townships in the Buea Municipality.

The Molyko Township has about eight health facilities which range from the University Health Centre with equipped facilities and medical personnel open to the community at subsidised rates. The presence of the university student and staff population provide a ready market for

new and emerging health services. These health institutions offer jobs to locally trained medical personnel such as laboratory assistants and nurse assistants, thus assisting with job creation and poverty alleviation in the region.

Conclusion

The findings support arguments that the University of Buea has contributed to regional development primarily as a growth pole. Though not steered by any clear-cut policy, the UB has nevertheless made a significant contribution to the development of the region. Based on the growth pole thesis, the Buea area in general and the Molyko Township in particular, have witnessed significant economic and social transformation which has been moving gradually over the last couple of years to neighbouring townships; improving economic resilience; diversifying livelihood strategies; and improving information and communication services, infrastructure and other social services.

Prior to this study, the growth pole theory which has mainly been observed to apply to industrial regions and clusters in regional development, has now been operationalised and used to understand the contribution of 'single player universities in peripheral regions' (Boucher et al., 2003) as is the case of the University of Buea in the Buea Municipality. However, the application of the growth pole concept has been done cautiously when trying to understand the contribution of a single university in a peripheral regions. The growth pole concept should be limited to areas where the recent change in development trends being observed can clearly be attributed to the introduction of only one university or institution. In cases where there is more than one such activity in the region, both the growth pole and counterfactual analysis methods used in this study could lead to inappropriate conclusions. More importantly, it cannot be concluded from this single case study that all single player universities in peripheral regions will serve as growth poles. An important issue for further research will be to use a number of

case studies to establish what key aspects are necessary for a university to be considered a growth pole in a region.

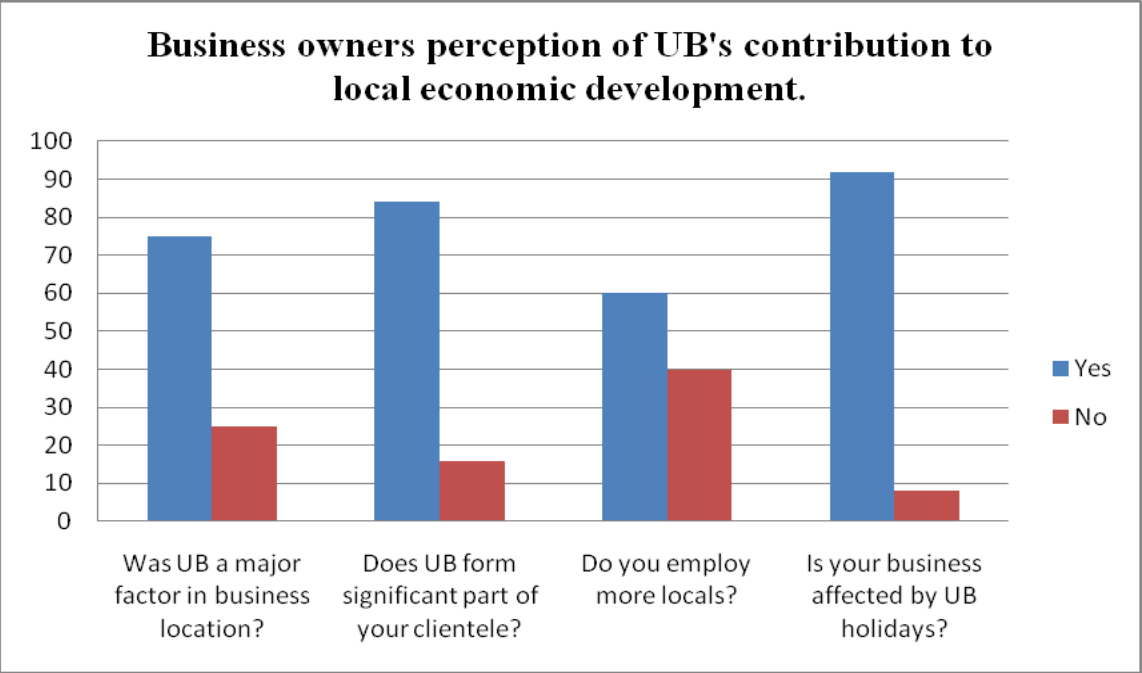
Finally, what remains unclear with regard to the University of Buea's role as a growth pole in the region is the fact that the levels of innovations and inventions which according to Waugh (2005), should be an integral aspect in maintaining a sustained balance in the growth pole cycle, remain unclear. The UB has not been able to provide any form of innovation or spin-offs, due, inter alia, to very low levels of research and innovation. Research into the weak institutionalized engagement culture will provide a better understanding of this shortcoming and a possible insight for national, regional and institutional change.

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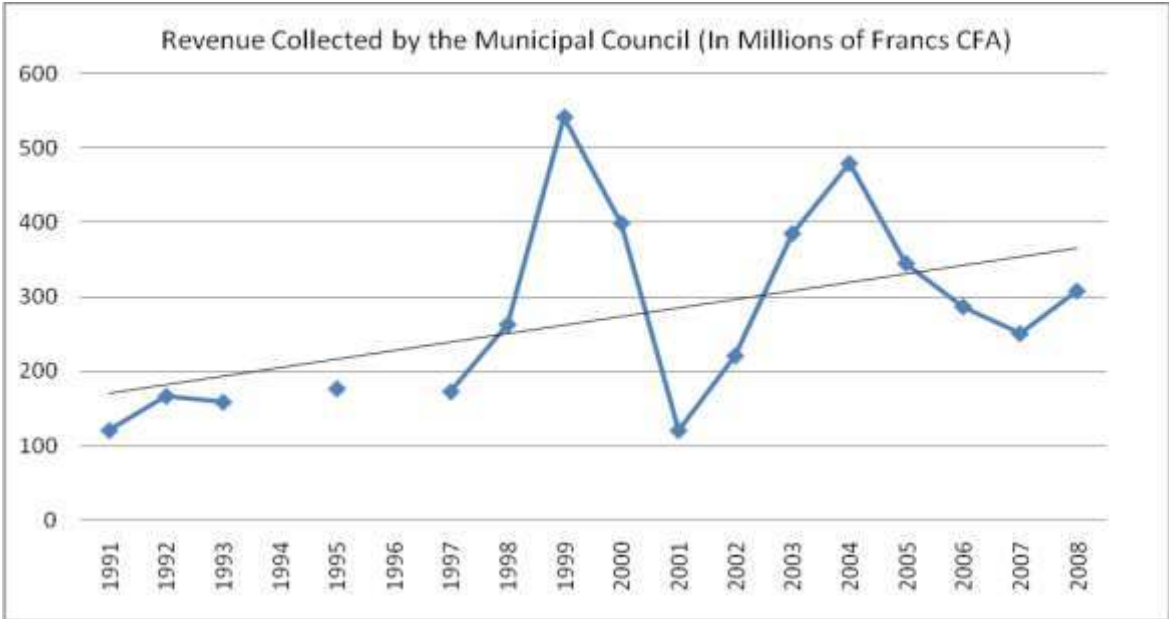
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Figure 1:



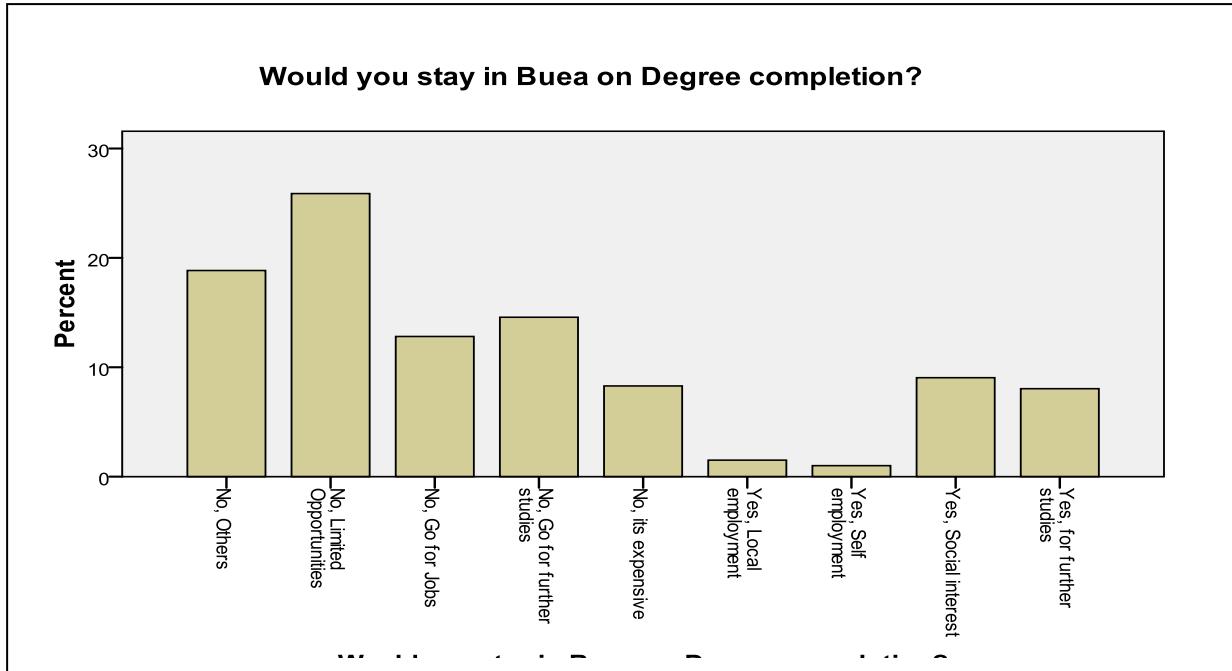
Source: Fongwa, (2010)

Figure 2:



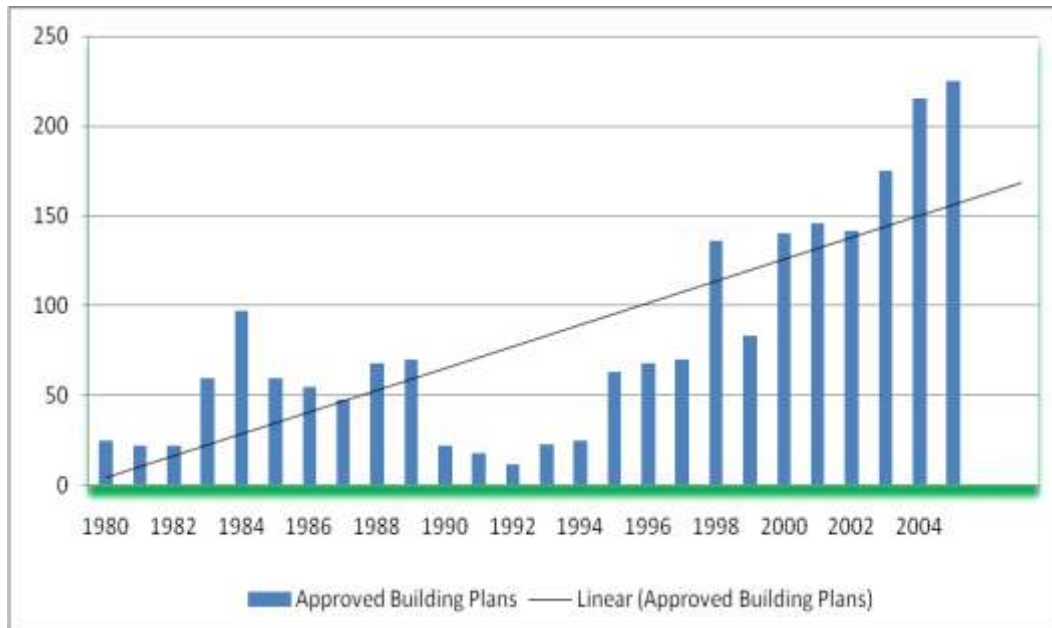
Source: Buea Municipal Treasury (2009)

Figure 3



Source: Fongwa (2010)

Figure 4



Source: Data from Delegation of Housing and Town Planning, Buea (2005)

Figure 5

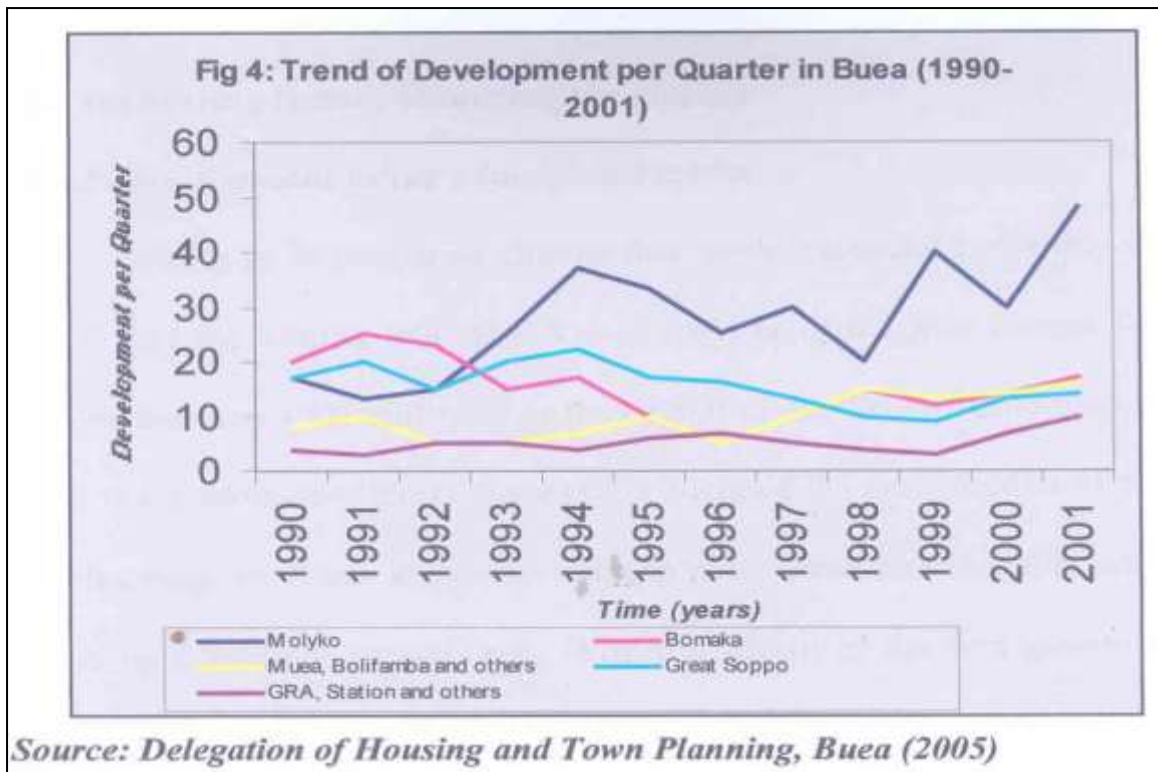


Table 1: Molyko Business development

Indicators	Restaurants	Bar	Hair Saloon	Financial institutions	Cyber cafes	Provision Shops	Local Publishers	Call Boxes	Bookshops	Tailors
Count 1	80	83	130	14	21	130	96	315	8	50
Count 2	73	97	126	16	25	119	88	330	7	54
Count 3	89	80	134	13	24	146	113	322	7	47
Average of counts	81	87	130	14	23	132	99	322	7	50
Average jobs created	6	3	3	5	5	5	4	2	3	5
Total Jobs created	484	260	390	72	117	658	396	645	22	252

Table 2: Bomaka Business development

Indicators	Restaurants	Bar	Hair Saloon	Financial Institutions	Cyber Cafes	Provision Stores	Local Publishers	Call Boxes	Bookshops	Tailors
Count 1	19	10	23	2	1	29	1	45	0	5
Count 2	14	14	17	2	1	26	2	47	0	6
Average	17	12	20	2	1	28	2	46	0	5
Average Jobs created	4	2	3	5	3	3	2	1	0	5
Total Jobs created	66	24	60	10	3	83	3	46	0	28

Table 3: Muea Business development

Indicators	Restaurants	Bars	Hair Saloon	Financial Institutions.	Cyber Cafés	Provision. Stores	Local Publishers	Call boxes	Bookshops	Tailors
Count 1	26	23	30	0	1	40	6	44	1	24
Count 2	42	30	42	3	1	37	9	55	1	30
Average	34	27	36	2	1	39	8	50	1	27
Average Jobs Created	3	2	2	4	2	2	2	1	1	3
Total jobs	102	53	72	6	2	77	15	50	1	81

Table 4: Counterfactual Analysis

Indicators	Restaurants	Bars	Hair Saloons	Financial Institutions	Cyber Cafes	Provision Stores	Local Publishers	Call Boxes	Bookshops	Tailors	Total
Molyko Township	81	87	130	14	23	128	99	322	7	50	941
Neighbouring Township 1 (Bomaka)	17	12	20	2	1	28	2	46	0	6	134
Neighbouring Township 2 Muea	34	27	36	2	1	39	8	50	1	27	225
Difference (Bomaka)	64	75	110	12	22	100	97	276	7	46	807
Difference (Muea)	47	60	94	12	22	89	91	272	6	23	716

Source: Fongwa, (2010)

Table 5

Township Area	Molyko	Bomaka	Muea
Social Facility			
Health Centres / Clinics	8	2	1
Banking / Financial Facilities	14	2	2
Hair / Barbing Saloons	130	20	36
Churches	21	5	7
Restaurants	81	17	34

Source : Fongwa (2010)