# PUBLIC POLICY
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## Special Issue: Smart Specialisation, Territorial Innovation and Policy Change

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# Smart specialisation in Africa: Potential for regional development in Cameroon based in tourism-training-innovation resources

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**ABSTRACT**

Tourism in Cameroon, just like in most Sub-Saharan African countries, despite its potential, has been lagging behind in international terms, with one of the causes being the lack of adequate sectoral policy tools and strategies to carry out developmental goals. This article considers the notion of smart specialisation, currently in the spotlight in European Union's regional policy, to analyse the situation in Cameroon. Firstly, it provides a brief outlook at the Cameroon's economy, coupled with a comprehensive look of innovation, training and tourism resources at regional level. Secondly, specialisation indices are calculated and a cluster analysis is implemented to find territorial patterns at regional level. Regions with high potential for tourism development are grouped into a cluster while other clusters are constituted by regions with lower potential for tourism and innovation. Hence smart specialisation may be an interesting concept to be implemented in Cameroon and other African regions as a planning tool, a proper exercise to discover the existing potential of the territories needs to be performed in order to define accordingly priorities and areas of intervention.

**Keywords:** Cameroon, Cluster Analysis, Smart Specialisation, Tourism.
**JEL classification:** Z38, O20

## 1. INTRODUCTION

The effects of the global economic meltdown have been illustrative on economies' resilience. Countries and regions from the sub-Saharan Africa and the African continent as a whole were affected, high growing unemployment and decrease of GDP - Gross Domestic Product, with difficulties in adapting and solving the problems resulting from the shocks of the international economic downturn. In the mist of such difficult economic situation, governments worldwide, both at national and transnational levels, have been looking for solutions to overcome these turbulent times and set their economies up and running again.

Most economies in Africa, and especially in sub-Saharan Africa, rely profoundly on agriculture. The case of Cameroon is not different, with the economy currently recovering from the crisis thanks to implemented fiscal policies. There is the need to add to such fiscal policy efforts complementary

policy tools in other sectors that have shown resilience in the face of the global economic meltdown. In this particular aspect, tourism has proven globally to stand the challenges posed by the economic crisis, keeping a stable growth with tourism destinations floating and preventing a higher impact in local economies.

The uninterrupted and steady growth of tourism in Africa recently led the majority of governments in the continent to realize the importance of developing the tourism sector. Despite these efforts, Africa is far from reaching its full potential. Africa's share of the tourism market is still small with just about 50 million tourists from a global total of 900 million tourists in 2009 (Kimbu, 2010). Despite this, most of the African market is concentrated in the North, East, West and Southern parts of Africa. Countries in the central sub-region of Africa, one example is Cameroon, are not experiencing much growth.

Even benefitting from an acclaimed rich culture and biodiversity, the tourism sector in Cameroon is still struggling to deliver on its full potential. There is the need to find a suitable policy and strategy tools to enable the country's tourism sector to reach its full potential.

The tourism sector in Cameroon accounts, as of 2013, for 2.1% of the total employment in the country and this figure is expected to grow to 3.5% in the next 10 years. Tourism policy tools need to be revised for the sector, which currently exhibits unexploited capacity for the nation and its regions to benefit from. The stage at which Cameroon tourism industry portrays a picture of tourism at the stage of infancy and this could be deduced from the fact that there is no clear cut policy or strategy for the sector nor there is a development plan in place (Kimbu, 2010).

With this context in mind, this study has the following objectives. First, following the adoption of Research and Innovation Strategies for Smart Specialisation (RIS3) in the European Union to close the economic gap between regions of member-states, using R&D and innovation to explore and valorise knowledge in areas in which regions have competitive capacities, the article presents the concept of smart specialisation, and considers if it could be a useful policy notion for sub-Saharan African countries, such as Cameroon. Second, using selected indicators regarding economic dynamics, innovation and tourism resources, the article describes the current economic environment in Cameroon, analysing the performance of the ten administrative regions of Cameroon.

In the process of reaching the above mentioned objectives, this work will be trying to understand the regional specialisations in Cameroon. The study will map the relative specialisation of Cameroon's regions in terms of tourism, training, and innovation and propose policy options for the regional development.

The utilisation of the concept of 'smart specialisation' in the field of tourism is relatively scarce and the existing literature dedicated to connect smart specialisation and tourism is still under development. In the majority of European examples of RIS3 the connection between these two aspects, tourism and Research & Innovation, is very limited indeed. Nonetheless some regions, such as the Algarve region or Cornwall & Isles of Scilly, have explicitly defined tourism as a priority in RIS3 and analysed the connections of this sector with others key S&T areas (CCDR Algarve, 2014; Cornwall & Isles of Scilly, 2013).

The case of Cameroon is a reason for concern as there is virtually no empirical research or existing literature dedicated to smart specialisation and even regarding tourism in Cameroon's regions. In this way, this study is going to make use of both quantitative and qualitative data to explore the applicability of smart specialisation as a policy and strategic tool, especially for tourism development, using Cameroon's regions as the context for this study. The research work will be concentrating in comprehensive available data on tourism, training and innovation in Cameroon's ten regions. Taking into consideration, the diversity and the availability of different tourism resources and services in Cameroon, we saw the interest to investigate the existing regional typologies to help the tourism sector and the economy understand its capacity.

The article is organized as follows. After this short Introduction we will introduce a literature review that will deal with the main theoretical concepts like smart specialisation, tourism specialisation and differentiation, and related and unrelated variety. Then a brief look into the case of Cameroon's economy and its regions. Some methodology considerations for the empirical study: the use of statistical methods for data analysis and the collected data. Then, cluster analysis and specialisation mapping is used to improve the understanding of regions in Cameroon. Finally, the conclusion entails a roundup of the research results, policy implications, the limits of the analysis, and suggestions for further developments of the work

## 2. LITERATURE REVIEW

### 2.1. From Specialisation to Smart Specialisation

Specialisation regards when a nation, a region, or a city gives more importance to a specific sector of production over other sectors within the economy. The territory may have different levels of opportunity costs for production. This could be a result of differences from human capital, science and technology, natural resources, or intensity of capital in labour. These differences may serve as a source of comparative advantage. Hence, nations will turn to specialize in a particular sector or area of the economy where they have a comparative advantage over other nations due to relatively low cost of production, giving them a gain in trade regarding other nations that might be lacking in this area of trade but have a comparative advantage in the production of something else (Krugman & Obstfeld, 1998). Traditional studies in Economics analyse specialisation from two main angles. The notions of relative and absolute specialisation come into play. Absolute specialisation regards the situation when a country or region is considered specialized if a little number of industries or sectors exhibit high shares of overall employment of the country. Relative specialisation regards a region or country being specialized in one particular sector or activity as compared to other regions even though the absolute weight of this industry in the region or country is lower. In this case the region is more specialized in certain economic activities than other regions (Palan, 2010).

The idea of smart specialisation was improved upon the classical ideas of David Ricardo and Adam Smith, that made mention of the need to focus on the activities where regions were better rather than the areas where they were worst (Bonaccorsi et al., 2009; Bonaccorsi et al. 2011). In recent times, the concept of smart specialisation could be traced partially to the Barca report (Barca, 2009) and the works of Dominique Foray and the Knowledge for Growth Expert Group within the framework of the European Research Area (ERA) (OECD, 2013). The major reason for Europe's lagging behind as compared to other countries like the USA and Japan in terms of competitiveness was explained by this group by research and innovation (R&I) intensity and the dissemination of new technologies (McCann & Ortega-Argilés, 2015). Some of the findings of the group brought to light the fact that, there was an overly fragmented investment in research in Europe, lack of investment coordination of R&I between stakeholders, and shortage of critical mass. It also noted the fact that regions invested in similar areas of others, bringing to light the existence of the "Me Too" syndrome. Investments were replicated in fashionable areas such as information and communication technology, nanotechnology, and biotechnology.

The group recommended the support for structural change, enabling the emergence and growth of new activity sectors or industries by investing in R&I areas having strategic potential in each European region, taking into consideration each and every sectors of strength and potential. Therefore, is the need for a change in R&I strategies taking into attention the existing conditions in each and every region.

Smart specialisation as a strategic approach to economic development is geared towards supporting the existing potential of endogenous resources by stimulating R&I. It regards the process of developing a common strategic vision, identifying place-based domains of strategic potential, developing multi-stakeholder governance mechanisms, setting priorities and using support policies to maximize the knowledge-based development potential of the region; regardless of whether it is strong, weak, high-tech or low-tech (Midtkandal & Sorvik, 2012).

Smart specialisation is a policy concept that looks at the process of 'entrepreneurial discovery'. This idea regards the policy process of selecting and prioritizing sectors and activities in regions where there is a need to develop a cluster of activities and giving entrepreneurs the possibility to explore the right domains for future specialisation and structural change (Foray et al., 2011). The concept of smart specialisation favours a bottom-up approach in policy making, in which search activities by entrepreneurs are promoted for them to be able to identify possible advantages of innovation-based technologies in their various economic domains. Entrepreneurs are in the best position to help policy makers to discover the R&D and innovation areas in which a region is most likely to excel, taking into consideration its existing capabilities and productive resources.

Proponents of smart specialisation favour the concentration of efforts and resources in a limited number of priorities of specialisation. These should be areas where economic agents, countries, regions, and groups have excelling explicit or latent capacities (Marinelli et al., 2016). Smart specialisation will result in a strategy that jeers at building on local strengths, competitive advantages and potential for excellence, as well as supporting technological as well as practiced-based

innovation and stimulate private sector investment. From the policy perspective, smart specialisation depends on selecting and prioritizing fields or areas where a cluster of activities should develop. This involves risks for policy-makers of selecting the wrong domains and creating negative path trajectories. It should be noted that a goal of policy makers should be to make a strategic choice that will minimize these risks.

The key question is what domain, what activity, a region would benefit from and should specialize in R&D and innovation (Foray, David & Hall, 2009). Taking into consideration resource constraints, regions cannot invest in all STI areas. They need to focus on certain domains, so they can become more competitive and grow. Regions to be competitive need to concentrate on developing distinctive and original areas of specialisation; not by imitating other competing regions, but by focussing on areas which they do have unique potential to advance and compete. The difficult and key question is in which areas regions must concentrate their efforts? The answer to this is complex but complementary; that is to say, concentrating on innovative projects that will improve other regional productive resources.

The issue to consider here is that smart specialisation emphasizes the need for regions to identify and select their own specific potential resources of innovation and economic development. To do this, regions are expected to carry out a serious self-assessment of their knowledge, assets, capabilities and competences and those involved in the process of knowledge transfer (McCann & Ortega-Agiles, 2015).

There has been an increase in the presence of the concepts of related and unrelated variety in the regional studies literature, with many authors (Jacobs, 1969; Glaeser et al., 1992; Van Oort, 2004), postulating that the presence of variety in an economy can be a surplus in terms of sources of economic growth. This implies that effects on growth are not only caused by the stock of inputs but also the precise composition (Frenken et al., 2007) and as such, since spill overs regard geographical boundaries, the differences in regional growth should be related to qualitative differences in the composition of an economy, particularly at the level of its regions. It should be noted that only some sectors are complementary and their joint presence causes extraordinary growth within an economy.

Simply put, a region specializing in a set of interrelated industries will experience higher rates of growth, as compared to a region specializing in industrial sectors that are not complementary to each other (Frenken et al., 2007). On the other hand, the issue of regional economic growth, development and unemployment comes into play. Looking at sectoral diversification, a high variety of sectors within an economy simply means that a negative shock in the demand for any of these sectors will have just limited effects on the growth and employment while a region more specialized in one sector of activity or sectors of activities with correlated demand, runs the risk of a serious showdown in growth and high rates of unemployment due to demand shock. As argued by Passitti (1993), the lack of growth in the sectoral variety by an economy over time will lead to suffering from structural unemployment and ultimately to stagnation.

But the debate about smart specialisation is not absent of criticism (Asheim, 2013). Several authors have underlined that the strategies focusing smart specialisation are only recycling and repackaging existing policies, as those associated to clusters and innovation systems (Rhiannon, 2014) without the adequate emphasis in the new concepts of smart specialisation such as the 'entrepreneurial discovery'. These strategies were also heavily criticized by its unbalancing effect in the competitiveness and social cohesion among regions by centralizing the investments in terms of excellence criteria were the already more developed regions are more capable (Pessoa, 2015). If the strategic investments are only made taking into consideration the S&T infrastructure several regions will not be able to catch up. The territorial specificities, the tacit dimensions of knowledge production and learning based in the doing-using-interacting are crucial to be also included in sophisticated versions of RIS3 (Nunes & Lopes, 2015). Some sectors, which are not knowledge intensive, such as tourism have potential to cross-fertilize advanced knowledge activities, creating conditions for more related variety. For example, regional economies can use tourism to benefit from creative and cultural activities to ignite regional cultural and creative industries and achieve smart specialisation (Cooke, Pinto & Cruz, 2015).

A smart specialisation strategy involves the knowledge of the path dependencies created in each country and region in order to understand their consequences and to define strategies that can incorporate them and maximize their potential through the alliance with other emerging sectors. This process should thus be articulated and renewed in order to create competitive advantages and

innovative dynamics, without representing a break in the structure of the economic and social fabric of the regions. The case of Portugal is an interesting case, as it is a country that has undergone austerity and economic recovery programs, which have brought several social and economic consequences, while simultaneously developing its strategy of smart specialisation. Pinto (2016) identifies four generations of the evolution of S&T and innovation public policies that set the pace of institutional change regarding the generation and consolidation of innovation routines in Portugal. A first generation regarding the grassroots of S&T policy, marked by a vertical structure governance in which it was assumed that the benefits from scientific research came mechanically and sequentially to companies, resulting in the birth of several public universities in Portugal; a second generation of new actors and infrastructural investment with the birth of several development and innovation agencies and actors; a third generation aimed at consolidating the STI dynamics, marked by the acceleration of scientific and technological system, mainly stimulated by government spending, the change of knowledge institutions and the institutionalization of assessment practices and participation in science and internationalization of the actors of the system; and the fourth generation encompass by the times of turbulence and austerity with the creation of programmes aimed at stimulate the innovation system in a fragile economic context.

The new age of policies, concerning the smart specialisation strategies for 2020 is clearly supportive of the design of new instruments oriented towards innovation. The European Union strategic documents underline the determination to overcome the economic turmoil and create conditions for a more competitive economy with higher employment in 2014-2020. At the present moment it is yet very difficult to comprehend to true impact of the RIS3. Nonetheless it is clear that RIS3 helped to define a more limited number of policy intervention priorities and a larger consensus among the national and regional stakeholders in the pathway to innovation. But the challenge is huge to implement such an ambitious agenda articulating conveniently the different national and regional capabilities, the selected priorities, and the interests and agenda of specific innovation actors (Pinto, 2016). The EU is beginning to stimulate efforts to transfer the utilisation of the 'smart specialisation' rationale in the formulation of regional policies in developing countries, particularly in South America (Barroeta et al., 2017). Africa may be next.

## 2.2. Tourism Specialisation and Differentiation

Tourism is an engine for economic development with the main focus on the regional level (Jackson et al., 2005). The economic contribution of tourism and tourism specialisation is very important with regards to regional development as it brings forth job creation, hence economic growth. As noted by Sequeira & Nunes (2008) countries specialized in tourism grow more than others on average. Based on Jackson and Murphy (2002) the application of the concept of clustering to tourism sector or industry is completely acceptable taking into consideration, the fact that tourism products interact with local economic bases, prompting interrelated organizations to act together, leading to the creation of agglomeration dynamics.

The building of a tourism cluster can be a major driving force in improving the current infrastructure and spreading economic activities (Santos et al., 2008). The setbacks in developing economies have caused companies not to easily want to be located away from the centre. It is common to find economic activities concentrating in the centre or around the capital cities in these countries. The economic geography of developing countries makes room for high costs in productivity, bottlenecks, congestions and inflexibility leading to high cost of administration and serious inefficiencies in conjunction with the lower quality of life.

Technological development creates opportunities for the development of tourism in the world today. The ability of a nation to provide attractive and precise information about the tourism characteristics of each its territory; characteristics such as heritage sites, cultural tradition and natural resources can contribute or add to the creation process of specialized tourism products for particular visitor segments. Technological development acts as an important tool for the creation of differentiated markets; of course in line with the local characteristics of the territory, so as to attract a particular segment of the market (Romão et al., 2012).

The capacity of a region or destination to ensure its attractiveness in the long term through differentiation depends on its ability to promote innovative products and services linked to its natural and cultural characteristics. This kind of development strategy provides destinations with a monopolistically competitive position with regards to other destinations (Butler, 2011). Thanks to

differentiation, instead of cost-leadership competition which would have little effects on the local economies and effects on the natural and cultural resources, the value added of tourism can be significantly higher and the life cycle extended. The benefits of local cohesion enhancement through the promotion of interaction between tourists and residents also contribute towards good conditions for tourism development and the spread of benefits amongst local stakeholders.

To sum up, regions to develop need to specialise in specific areas where they have explicit or latent capacities. Nonetheless it is important to avoid excessive concentration of resources in certain geographical areas and limit the over-specialisation in particular activities that may originate less effective development trajectories. The concept of smart specialisation emphasises the selection of economic and R&I priorities based in the endogenous resources of the regions for the creation of adequate strategies and attraction and generation of more resources. Tourism is an economic activity with high potential for igniting agglomeration dynamics and the emergence of regional clusters by stimulating demands and creating linkages with other sectors in the economy that may explore the benefits of R&I.

## 3. THE ECONOMY OF CAMEROON AND ITS REGIONS

### 3.1. Profile of Cameroon

Located in the central part of the African continent, with an area size of 475,442 square kilometres, the Republic of Cameroon has a population of about 19.4 million inhabitants (Kimbu, 2010). Cameroon locates in the south of Nigeria and Chad, in the west of Central African Republic and in the North of Equatorial Guinea, Gabon and Congo. The country, because of its diversity regarding animal life, plants and its population size, couple with variations in landscape, vegetation, and climate, is usually being described as "Africa in miniature".

In 1960's, after the independence, the Cameroon's economic base was purely agrarian with the economy being dominated by agriculture, forestry and fisheries. The coming of the petroleum sector in the 1980's boosted the country's economy. The country presents one of the highest literacy rates in the continent of Africa (IMF, 2010) and is one of the two bilingual countries in the world with English and French as the official languages. Though not significant when compared with other petroleum nations in the world, the petroleum sector in Cameroon contributed about 60% of the country's export earnings during the 1980's.

Reading from African Economic Outlook, 2014 (African Development Bank, Organisation for Economic Co-operation and Development, United Nations Development Programme, 2014); current figures and forecasts reveal a promising position for Cameroon in the coming years, with a 3.6% growth rate registered in 2013 and it is expected to follow the same in 2014 in the primary sector. The secondary sector witnessed growth from 4.7% in 2012 to 5.7% in 2013; just like the primary sector, the secondary sector is expected to follow the same growth pattern in 2014. The tertiary sector growth rate increased from 5.5% in 2012 to 5.9% in 2013, with forecast reading an increase from 5.4% in 2014 to 5.5 % in 2015. The above dynamics in sectoral growth are accounted for by improving performances in areas such as telecommunication, transport and the recovery of the agriculture, mining and petroleum sectors. With the rising population, the need for education constantly has been increasing, whatever level of education. The country witnessed a 5% rise in higher education, 7% in primary and secondary education between the years 2010 and 2013. In 2012, 209,000 students registered in State universities, while in secondary and primary levels; 1,713,000 and 3,800,000 students and pupils registered respectively.

Despite the significant rise in the interest for education, there still exists the need to match the human and material requirements needed to train this growing population. In the year 2012, with regards to infrastructures, the country had 16,000 primary schools, 3,147 secondary schools and 8 State universities. Regarding human resources, in the same year 2012, the country had 84,867 teachers for primary schools, 79,943 secondary school teachers and 4,051 lecturers in its public universities; giving a ratio of about 53 students for each lecturer, 21 students for each secondary school teacher and 46 pupils for each primary school teacher (NIS, 2013). Table 1 and Table 2 show the GDP growth rate between 2013 and 2016 and GDP by sector between 2009 and 2014 (African Development Bank, Organisation for Economic Co-operation and Development, United Nations Development Programme, 2015).

**TABLE 1: MACROECONOMIC INDICATORS**

| Macroeconomic Indicators | 2013 | 2014(e) | 2015(f) | 2016(f) |
|---|---|---|---|---|
| GDP Growth | 5.5 | 5.3 | 5.4 | 5.5 |
| Real Growth rate of GDP per Capital | 3.0 | 2.8 | 2.9 | 3.0 |
| Inflation | 2.1 | 2.2 | 2.4 | 2.2 |
| Fiscal Balance (% of GDP) | -4.1 | -5.2 | -6.4 | -5.8 |
| Current Account (% of GDP) | -3.8 | -4.2 | -4.3 | -4.5 |

Source: National Data Administration; Estimates (e) and Forecast(f)

**TABLE 2: GDP BY SECTOR (IN PERCENTAGE OF TOTAL GDP)**

| Sectors | 2009 | 2014 |
|---|---|---|
| Agriculture, Forestry, Fisheries and Hunting | 23.5 | 22.7 |
| Fishing | 1.3 | 1.1 |
| Extractive Activity | 7.9 | 9.3 |
| Crude Oil and Natural Gas Extraction | 7.7 | 9.1 |
| Manufacturing Activities | 16.2 | 14.1 |
| Production and Distribution of Electricity, Gas and Water | 1.0 | 1.0 |
| Construction | 4.8 | 6.2 |
| Wholesale and Retail: vehicles, automobile repair, Hotels and Restaurants | 20.8 | 19.6 |
| Hotels and Restaurants | ---- | ------ |
| Transport, Storage and Communication | 6.5 | 6.9 |
| Financial intermediation, Real Estate, Rentals and Activities of Service to Enterprises | 10.4 | 10.9 |
| Public Administration and Defence: Compulsory Social Security | 8.3 | 8.1 |
| Other Services | 1.3 | 1.2 |
| Gross Domestic Product at Basic Price/ Cost of Factors | 100.0 | 100.0 |

Source: National Data Administration

The Republic of Cameroon fixed itself the objective to be an emerging country by the horizon of 2035. Documented as part of "Cameroon's vision 2035" (Ministry of Economy, Planning and Regional Development, 2014), the long term developmental plan is programmed on three periods; from 2010-2019, with the objective of modernizing the economy and growth acceleration with a projected growth rate of 5%. From 2020-2027, the objective is of attaining the level of countries with intermediate revenue, that is with a double digits' growth rate. The 3rd stage, from 2028-2035, has the objective of becoming an industrialized country with the secondary sector accounting for 40% of its GDP.

To become an emergent nation, the country aims to improve its growth rate to 5.5% and reduce formal unemployment from the current 75.5% to less than 50% by 2020. All these through the creation of thousands of formal employment positions per year for the next ten years and bring down the rate of monetary poverty from 39.9% in 2007 to 28.7% in 2020.

The current weak performance of the country's economy could be seen from 2013-2014 report of the WEF - World Economic Forum (Eteki, 2014), where Cameroon is ranked 115th out of 148 countries on competitiveness rating. Based on the World Economic Forum classification indices, the economy of Cameroon is classified to be at its first stage. A stage at which growth is brought about by the mobilization of factors of production with quality of labour being at the very lowest, revenue and of course low productivity. Looking at the global situation, where development and competition amongst economies is top on the agenda, Cameroon is forced to have a strong and competitive economy capable of gaining profit from international exchange and guarantee long term competition.

### 3.2. Position in the Global Economy and Competitiveness of Cameroon

The classification approach adopted by WEF is the one that has gained recognition (Eteki, 2014). This approach classifies countries based on the global quality of business environment with the data collected from the national bureau of statistics and from surveys on opinions conducted within countries. Based on the WEF report in 2013, Cameroon was ranked 115th out of 148 countries indicating a drop in three places relative to 2012, ranked in 112th. Other indicators make it possible to measure the level of competitiveness of a country relative to another.

World Bank publication "Doing Business" (Eteki, 2014) makes use of indices such as a quantitative evaluation of regulators geared towards creating business, construction permits, personnel recruitment, transfer of property, obtaining credit, protection of investors, payment of taxes, cross border trade, contract execution and closure of small businesses. Based on these indicators, Cameroon is ranked 161st out 185 countries.

From Eteki (2014), the Enabling Trade Index (ETI), a composite indicator used by the WEF, Cameroon was ranked 118th out of 132 in 2012, losing three places from the 2010 classification. In 2013, the Corruption Perception Index (CPI) of the Transparency International ranks Cameroon 144th out of 175, with Cameroon being one of the most corrupt countries in the world. The report on human development ranks Cameroon 150th out of 186 countries in 2012. On the Bertelsmann Transformation Index (BTI) on the changes in societal development in favour of democracy and the economy, Cameroon occupies the 98th position out of 129 countries in 2014.The Ibrahim index (BI) on good governance in Africa, geared towards promoting better governance in Africa in the areas of health, security, education, economic development, political rights, smooth transition of power. Cameroon occupies 35th position out of 52 countries in competition.

Looking at these rankings, it is significantly clear that the level of competitiveness of Cameroon is very weak and at this level guaranteeing sustainable development and becoming and emerging country by 2035, is a far-fetched dream.

From the point of view of certain economists, a nation being competitive could be seen from the macroeconomic standpoint, this is to say a country's balance of trade, how an economy imports and exports, and what share of the international market the economy holds (Fagerberg, 1988). A country becomes less competitive when its exportation reduces and its importation increases. For the case of Cameroon, the balance of trade has been falling indicating a weak performing economy (Eteki, 2014).

Following a survey carried out on 500 enterprises in Cameroon conducted in 2009, comprising small, medium and large scale indigenous enterprises (Eteki, 2014), it was reported that, power shortages, administrative bottlenecks, and difficult access to finances form the major obstacles leading to the poor competitive nature of enterprises in Cameroon. Insecurity, direct and indirect tax, dysfunctional judicial system, corruption and unhealthy competition are also part of these obstacles. The survey reports major constrains against the smooth functioning of businesses in Cameroon. By order of influence, include amongst others: taxes 58%, corruption 50%, access to credit 37%, administrative bottle necks 35.2%, unhealthy competition 25.8%, infrastructure 18.4% and finally interest rate 18%. One could also cite poor public–private partnerships, power shortage, transportation and dysfunctional justice system.

### 3.3. Innovation in Cameroon

In the last decades, new technologies, new industries and new economic models have been at the origin of the remarkable growth in productivity and balance of payment of nations (Rosenberg, 2004). Studies have shown that R&D accounted for innovation, in a strict sense. Innovation goes way above R&D and could be defined as bringing out a new product (goods or service) or new processes (improvements in the production), a new commercialization method or a new method of managing enterprises (work organization or external relations). This definition is inspired by Schumpeter (1934), to whom innovation is as a new combination of factors in the production process. This includes amongst others, new production techniques (process innovation), new needs for customers (product innovation), new sources of raw materials, new logistics and new ways of managing an organization. In other words, innovation is everything new which helps in improving a product or something new (OECD, 1997). Not limited to research labs and diverse experiments, the scope of innovation encompasses all, users, distributors and consumers; be it the government, the private sector or non-profit organization. It transcends boundaries, sectors and institutions. In the actual

context of international competition, innovation is placed in the heart of economic activities and it is fast becoming an instrument of economic policy for nations aspiring for prosperity and modernity.

In Cameroon the legislative and regulatory framework for the subsector of innovation is enshrined in the decree number 2012/393 of the 14th of September 2012. The sub-sector of innovation is under the control of the Ministry of Scientific Research and Innovation (MINRESI), a ministry responsible for putting in place and run government policies, when it comes to research and innovation.

Cameroon disposes of exploitable innovation potentials looking at the research results at stands presented in fairs organized at national and at regional levels (personal observation of the author). The database of experts and independent researchers is under construction at the Division for the Promotion and Support for Innovation (DPAI), and contains not less than 300 experts. This initiative could improve the level of value added to products and render the economy more competitiveness. Annual innovation reports from regions indicate potential waiting to be exploited and guided towards solutions on development problems of health and the fight against poverty.

Innovation is scarcely studied in Cameroon. A notable exception is presented in Safoulanitou et al. (2013) where SMEs located in the city Douala in Cameroon are compared with firms in Brazzaville and Kinshasa (Congo and Democratic Republic of the Congo). It relies for this on a survey of 256 SMEs and showed that Cameroon seems in a relative better position than its proximate neighbours. The statistical analysis of the data reveals that the main barriers to innovation are the high cost of innovation financing, the lack of funding, and lack of innovation financing system in the three countries. The dependence of Cameroonian SMEs technical progress made by their partners, the weight of barriers to entrepreneurship in the immediate environment of SMEs in Brazzaville and Kinshasa, also create a disincentive for innovation.

Most of innovation data already collected can help in showing the problems Cameroonians are facing and that these problems are in the agenda of public authorities, problems such a poor health, food, electricity, housing, climate change, and so on. Research in Cameroon has offered solutions but the problems reside in transferring these innovation results (Eteki, 2014). Most of these results are kept in drawers of government offices and are not put to contribution towards development. Generally speaking, only 10% of users of agro-pastoral and medicinal innovations results had access to innovation, though there has been a slight increase with actions from the MINRESI and its constituent departments.

As years are passing by the amount of budgetary allocation for MINRESI has been significantly reduced, so are finances allocated for innovation. The lack of an articulated national policy for innovation and poor financing is only weakening the practice of innovation research activities in Cameroon, hence the country's competitiveness is deteriorating. Budgetary allocation through MINRESI is way below 1% of the GDP of which a 10% budgetary increase will have a significant impact on the economy through innovation and research.

The nonexistence of a national strategic position or a R&I plan for Cameroon corroborates that the role of innovation is still downplayed in Cameroon's economy (Gaillard & Khelfaoui, 2007, Gaillard & Zink, 2003). For budgetary allocation to MINRESI and economic growth do not at all times reflect positively. In 2004, the budget allocation for the MINRESI stood at 6,052 million and growth was at 3.5% but in 2009, the budget was at 12,586 million but the country witnessed its lowest growth in the decade, 2.0%.

The administrative personnel at the DPAI is not yet fully prepared for innovation administration and this constitutes a great handicap for the setting up and carrying out of innovation policies. Some head of services at the DPAI have been dent for training institutions offering studies in innovation administration. This of course is a short term solution to this problem.

From Eteki (2014), a study carried out by the national institute of statistics of Cameroon in 2009 on employment and informal sector, the labour factor contributes 47% in production, innovation 31% and capital 22%. Also the same study on enterprises in Cameroon show that only around 11% of the heads of enterprises make use of results in R&I despite the efforts of the government to publicize these results. Going by the sectors of the economy; agriculture comes first with 76% amongst enterprises making use of research findings. Mining and extraction (30%), animal husbandry (29%), electricity, gas and water (21%), and finally food processing industries (17%) are other relevant sectors. The limited use of innovation results and findings by the enterprises explains the level of low productivity and weak competition in Cameroon and also the national economy as a whole. Worst of it, 89% of enterprises in Cameroon do not make use of innovation nor do even carry out any activity

in R&D within their organization, a situation that helps to explain the poor economic performance of the country in the international competition. It is a question of the country pushing enterprises to make more use of research results to improve their productivity and become competitive. For Cameroon to achieve its goals of becoming an emerging nation by 2035 it is of necessary importance to be competitive with products of higher value added and to do this, innovation is the most used path especially in this rapidly globalizing world.

## 3.4. Tourism and the Cameroon Regions

For those who visit Cameroon, the country is considered as *"all of Africa in a single country"* (Nzembayie & Kizito, 2009). The highly diverse cultural background with about 200 ethnic groups with over 233 languages coupled with an exceptional geological, ecological, and botanic potential, wild life in its natural form and varied climate conditions; all major characteristics that can be found in other countries in Africa.

The government of Cameroon as at 1974, under formal president Ahidjo set the tourism sector as having a special status, thereby creating the General Commissariat of Tourism and this body was reconstituted in 1975 to the General Delegation for Tourism with the main objective of encouraging private investment by airlines, hotels and travel agencies.

Tourism infrastructure has been improving steadily. In the 1960s the country had 37 hotels and 599 rooms on offer. This number rose to 203 hotels and 3,229 rooms in 1976. In 1980, the country had 7,500 hotel rooms, most of which were located in the then main cities of Douala and Yaoundé. Cameroon recorded 29,500 tourists visit by 1971, this number rose to 100,000 in 1975 and 130,000 in 1980, with visitors mostly from France, the United Kingdom and Canada. By 2013, the country was registering 912,000 visitors from all over the world with 54.1% by road, 43.6% by flight and finally 2.3% by water (NIS, 2013).

According to international reports on economic impact of travel and tourism (WTTC, 2015), Cameroon's Tourism sector total contribution to GDP stands at 6.2%, that is XAF 941.1bn and it is expected to grow by 3.7% to XAF 981.3bn (6.1% of GDP) by 2015. It is also forecasted to rise by 5.7% pa to XAF 1,713.5bn by 2025 (6.5% of GDP). This contribution includes wider effects from investments, the supply chain and induced income impacts.

Travel and tourism is expected to generate 124,000 jobs directly in 2014, that is 12.4% of total employment and it is forecasted to grow by 2.1 % in 2015 to 127,000 (2.4% of total employment). Forecasts also indicate an increase of 3.2% pa over the next ten years by 2025 that is about 174,000 direct jobs. Travel and tourism is expected to have attracted capital of XAF 83.4bn in 2014 with an expected rise by 5.5% in 2015 and a rise by 4.2 % pa over the next ten years to XAF 133.2bn in 2025.

Looking at different components of Travel and Tourism in Cameroon, leisure travel spending (inbound and domestic) generated 56.8% of direct Travel and Tourism contribution to GDP in 2014 (XAF 489.3bn) compared to 43.2% for business travel spending (XAF 350.0bn). Leisure travel spending is expected to grow by 7.9% in 2015 to XAF 495.6bn and rise by 6% pa to XAF 883.4% by 2025. Business travel spending is expected to grow by 5.4% in 2015 to XAF 368.8bn and rise by 5.7% pa to XAF 644.7bn by 2025.

## 4. METHODOLOGY

This study departs from the collection of data and other related information from secondary data sources such as the Ministry of Tourism and Leisure of Cameroon, Ministry of Economic Planning and Development of Cameroon and Cameroon's National Statistics Institute, other tourism related international organizations, the national statistical institutes, academic articles, papers and written documents, period briefs and policy documents. Based on the data available, the creation of specialisation indices was done taking into consideration the tourism resources; methods suggested by several authors, such as Pérez-Dacal et al. (2014), for measuring tourism specialisation.

A first step in the analysis was the creation of a measure of specialisation. Within the literature, we can find an array of indicators when it comes to capturing the essence of specialisation of a region in a sector or sectors within an economy. The lack of consensus in which type of indicator is best to use leads us as far as this work is concerned to adopt the calculation of simple location quotients, in order to understand the level or degree of specialisation of regions in Cameroon with specific reference to the tourism sector. With this index we intend to have relative measures of specialisation

in tourism resources. To provide a glimpse to smart specialisation we added also information regarding the training and innovation resources in the country and calculated indices following an analogous approach.

A second step regards the adaptation of cluster analysis in order to bring out a picture of how economic dynamics and activities are agglomerated within the constituent regions of Cameroon. A cluster analysis is a statistical method that gives an understanding into the specific relationships that do exist within elements in a cluster and between clusters. Cluster analysis is a technique of partitioning data set without prior information. It aids in the classification of elements into groups, in a way that elements belonging to a particular group are much similar to one another and rather different from objects belonging to the other groups (Pestana & Gageiro, 2014).

By doing this, we are able to ascertain the levels of or the roles each region can play in the tourism sector in Cameroon. We can see which region is a leading region, which regions are followers and which regions actually act as connectors in determining the dynamics occurring in the tourism industry in Cameroon, taking into consideration the types of regions that do exist and by looking at the types of tourism activity or activities they are specialized in. Cluster analysis could be seen as an inductive exploratory technique, as it brings out the possibility of uncovering structures without explaining the reasons for their existence. This will actually enable us to capture the dynamics taking place within the regional economies in Cameroon and then provide some policy implications to move the tourism sector and smart specialisation forward and make it more competitive both at regional and at national levels.

### Data Collected at Regional Level

The data analysed refers to tourism resource data collected and assembled for NIS statistical yearbook on tourism resource stock found in all the ten regions of Cameroon (NIS, 2013). For index calculation purposes the available data on the tourism resources was then categorised in: Natural resources (Lakes, Waterfalls, Mountains and Hills, Caves, Rocks, Reserves, Beaches, Parks, Dams, Zoological gardens, Botanical gardens, Plantations); Cultural resources (Monuments, Artistry and Markets, Chiefdoms and Sultanates, Ranches, Bridges, Mine reserves, Camps, Climatic centres, Architectural remains, Others); and Secondary resources (Hotels, Restaurants, Leisure, Travelling agencies). In the absence of the adequate data at regional level for capturing other innovation-related dimensions, we used data on professional training (NIS, 2013) to understand the relative human capital potential for a smart specialisation strategy based in knowledge applied to the economic development. We also used the data from innovation per types in the report "*La competitivite des entreprises*" (Eteki, 2014) and information about the public and private higher education institutions in Cameroon in 2014 (MINESUP, 2014).

### 5. RESULTS

### Geographies of Specialisation in Cameroon

The simple comparison of absolute data does not permit an in-depth understanding of the typologies and degrees of specialisation in the regions of Cameroon. Hence it is of importance to map out the specialisation of the regions of Cameroon so as to give proper and better understanding of how resources are distributed and the way or role each region plays in this sector of activities.

Because the 10 regions of Cameroon vary in dimension, we created the indices taking into consideration land size and population size. After several comparisons, achieving consistent results, we decided to present the results of the study using the land size to create relative measures of the concentration of tourism, training and innovation resources in the analysed regions.

The calculation of the specialisation index is done in this way: the value of the degree of specialisation of a region in particular activity is obtained by subtracting the national minimum value of that activity from the value of the region and then divided by the maximum value after subtracting the minimum value. The scores varies from 0 to 1; being that the closer the calculated score is to the reference number of 1, higher the degree of specialisation of the region in a particular resource. The results are presented in the table 3 below.

TABLE 3: INDEX SCORES BY TYPE OF RESOURCE

| Regions | Natural resources | Cultural resources | Secondary resources | Training | Innovation | Higher Education |
|---|---|---|---|---|---|---|
| Adamawa | 0.50 | 0.62 | 0.55 | 0.24 | 0.00 | 0.34 |
| Centre | 0.09 | 0.16 | 0.47 | 0.45 | 0.21 | 0.83 |
| East | 0.47 | 0.40 | 0.30 | 0.43 | 0.25 | 0.06 |
| E. North | 0.07 | 0.18 | 0.03 | 0.01 | 0.16 | 0.08 |
| Littoral | 0.05 | 0.14 | 0.77 | 0.65 | 0.10 | 0.45 |
| North | 0.10 | 0.08 | 0.11 | 0.38 | 0.11 | 0.11 |
| N. West | 0.10 | 0.11 | 0.19 | 0.40 | 0.65 | 0.33 |
| West | 0.18 | 0.23 | 0.17 | 0.41 | 0.48 | 0.29 |
| South | 0.52 | 0.37 | 0.56 | 0.61 | 0.26 | 0.44 |
| S. West | 0.48 | 0.32 | 0.15 | 0.64 | 0.40 | 0.75 |

Source: Own elaboration

Using the above specialisation measures, the study performs a hierarchical cluster analysis (method Wards, measure Squared Euclidian distance) with the data that summarizes the index calculation of resources by territorial dimension. Based in the rescaled distance we have decided to retain the option of a structure of four clusters: the Adamawa, East and South regions will be in cluster 1. Centre and Littoral will be in cluster two. East North and North will belong to cluster 3. North West and West will be in cluster four while South West will be in cluster 4. The descriptive statistics by cluster are presented in table 4.

TABLE 4: DESCRIPTIVE STATISTICS OF THE VARIABLES BY CLUSTER

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Min | Max |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Lower Bound | Upper Bound | | |
| Natural resources | 1 | 3 | 0.4967 | 0.02517 | 0.01453 | 0.4342 | 0.5592 | 0.47 | 0.52 |
| | 2 | 2 | 0.0700 | 0.02828 | 0.02000 | -0.1841 | 0.3241 | 0.05 | 0.09 |
| | 3 | 2 | 0.0850 | 0.02121 | 0.01500 | -0.1056 | 0.2756 | 0.07 | 0.10 |
| | 4 | 3 | 0.2533 | 0.20033 | 0.11566 | -0.2443 | 0.7510 | 0.10 | 0.48 |
| | Total | 10 | 0.2560 | 0.20662 | 0.06534 | 0.1082 | 0.4038 | 0.05 | 0.52 |
| Cultural resources | 1 | 3 | 0.4633 | 0.13650 | 0.07881 | 0.1242 | 0.8024 | 0.37 | 0.62 |
| | 2 | 2 | 0.1500 | 0.01414 | 0.01000 | 0.0229 | 0.2771 | 0.14 | 0.16 |
| | 3 | 2 | 0.1300 | 0.07071 | 0.05000 | -0.5053 | 0.7653 | 0.08 | 0.18 |
| | 4 | 3 | 0.2200 | 0.10536 | 0.06083 | -0.0417 | 0.4817 | 0.11 | 0.32 |
| | Total | 10 | 0.2610 | 0.16716 | 0.05286 | 0.1414 | 0.3806 | 0.08 | 0.62 |
| Secondary resources | 1 | 3 | 0.4700 | 0.14731 | 0.08505 | 0.1041 | 0.8359 | 0.30 | 0.56 |
| | 2 | 2 | 0.6200 | 0.21213 | 0.15000 | -1.2859 | 2.5259 | 0.47 | 0.77 |
| | 3 | 2 | 0.0700 | 0.05657 | 0.04000 | -0.4382 | 0.5782 | 0.03 | 0.11 |
| | 4 | 3 | 0.1700 | 0.02000 | 0.01155 | 0.1203 | 0.2197 | 0.15 | 0.19 |
| | Total | 10 | 0.3300 | 0.24299 | 0.07684 | 0.1562 | 0.5038 | 0.03 | 0.77 |
| Training | 1 | 3 | 0.4267 | 0.18502 | 0.10682 | -0.0330 | 0.8863 | 0.24 | 0.61 |
| | 2 | 2 | 0.5500 | 0.14142 | 0.10000 | -0.7206 | 1.8206 | 0.45 | 0.65 |
| | 3 | 2 | 0.1950 | 0.26163 | 0.18500 | -2.1556 | 2.5456 | 0.01 | 0.38 |
| | 4 | 3 | 0.4833 | 0.13577 | 0.07839 | 0.1461 | 0.8206 | 0.40 | 0.64 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | 10 | 0.4220 | 0.19464 | 0.06155 | 0.2828 | 0.5612 | 0.01 | 0.65 |
| **Innovation** | 1 | 3 | 0.1700 | 0.14731 | 0.08505 | -0.1959 | 0.5359 | 0.00 | 0.26 |
| | 2 | 2 | 0.1550 | 0.07778 | 0.05500 | -0.5438 | 0.8538 | 0.10 | 0.21 |
| | 3 | 2 | 0.1350 | 0.03536 | 0.02500 | -0.1827 | 0.4527 | 0.11 | 0.16 |
| | 4 | 3 | 0.5100 | 0.12767 | 0.07371 | 0.1928 | 0.8272 | 0.40 | 0.65 |
| | Total | 10 | 0.2620 | 0.19674 | 0.06221 | 0.1213 | 0.4027 | 0.00 | 0.65 |
| **Higher Education** | 1 | 3 | 0.2800 | 0.19698 | 0.11372 | -0.2093 | 0.7693 | 0.06 | 0.44 |
| | 2 | 2 | 0.6400 | 0.26870 | 0.19000 | -1.7742 | 3.0542 | 0.45 | 0.83 |
| | 3 | 2 | 0.0950 | 0.02121 | 0.01500 | -0.0956 | 0.2856 | 0.08 | 0.11 |
| | 4 | 3 | 0.4567 | 0.25482 | 0.14712 | -0.1763 | 1.0897 | 0.29 | 0.75 |
| | Total | 10 | 0.3680 | 0.26330 | 0.08326 | 0.1796 | 0.5564 | 0.06 | 0.83 |

Source: Own elaboration.

Cluster 1: Adamawa, East, South
Cluster 2: Centre, Littoral
Cluster 3: E. North, North
Cluster 4: N. West, West, S. West

Based in these results we can name the clusters as the following (Figure 1). The cluster 1, painted in dark grey, regards the "Cameroon tourism wonders". It is constituted by the regions that are very strong in Natural and Cultural resources, includes the regions of Adamawa, East, and South. These are the regions that have very high potentials in Natural and Cultural resources, some strength in training and secondary resources but weak in innovation.

The cluster 2, painted in medium grey, regards the "Dynamic economic centres". These are the regions that are very strong in Training, Secondary, and Higher Education resources. It includes the regions of Centre, and Littoral. These regions are average in terms of Innovation and Cultural resources but weak in Natural resources.

The cluster 3, painted in black, regards the "Subsistence regions". It is a cluster that is weak in overall terms. It includes the most worrying cases in terms of under-development and distance to contemporary socioeconomic standards. It includes the regions of Extreme North, and North. These are the regions that are relatively better in Natural resources to the regions in Cluster 2, which are the weakest when it comes to this type of resources.

The cluster 4, painted in light grey, regards the "Innovative (and English speaking) regions", includes the regions North West, West, South West. These are the regions that have high innovative capacities and are also strong in Higher Education, Training, Cultural, and Natural resources but are in Secondary resources.

**FIGURE 1: REGIONAL CLUSTERS IN CAMEROON**



1 Cameroon tourism wonders
2 Dynamic economic centres
3 Subsistence regions
4 Innovative (and English speaking) regions
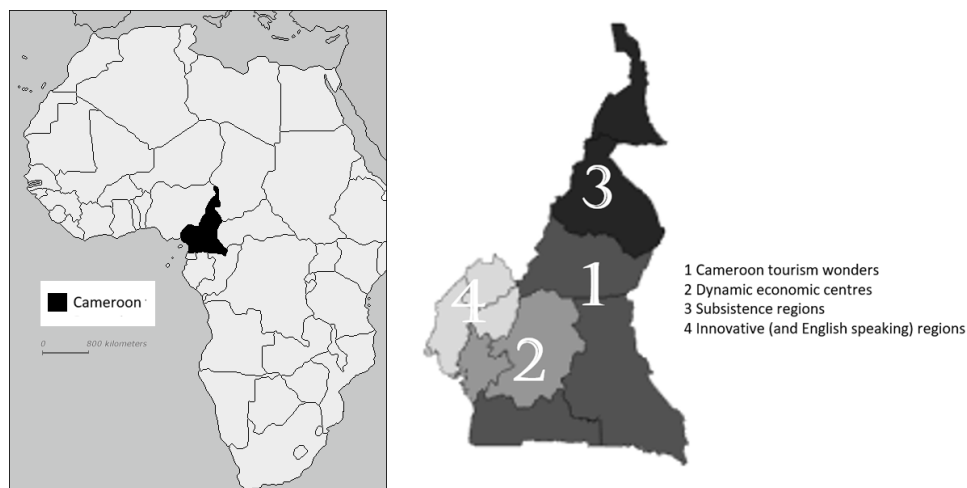
Source: Own elaboration

The Kruskal-Wallis, table 5, can be used as a non-parametric test, similar to ANOVA, to overcome the problems of heterogeneity of variance among groups, presented in this small sample.

**TABLE 5: NON-PARAMETRIC TEST (KRUSKAL-WALLIS)**

|  | Natural resources | Cultural resources | Secondary resources | Training | Innovation | Higher Education |
|---|---|---|---|---|---|---|
| **Chi-Square** | 7.248 | 6.327 | 7.727 | 4.727 | 5.982 | 4.945 |
| **Df** | 3 | 3 | 3 | 3 | 3 | 3 |
| **Asymp. Sig.** | 0.064 | 0.097 | 0.052 | 0.193 | 0.112 | 0.176 |

Source: Own elaboration.

In this test we do not reject null hypotheses of equal medians in Cultural Resources, Training, Innovation and Higher Education. This may indicate that variability of potential is much more substantive in tourism natural and secondary resources than in the other aspects across the territory.

The results highlight that the regions of Cameroon have differences between them. These regional specificities emphasize the importance of implementing regional development strategies that obey the country's guidelines and vision, but taking into account the regional path dependencies and their endogenous resources and anchor sectors. The design of a smart specialisation strategy that understand these specificities could allow the sedimentation of these sectors, maximize the value of these resources and leverage emerging sectors that can represent competitive advantages and added value, in order to maximize the economic and social structure of the regions and from the country.

## 6. CONCLUSION

This study was focused on looking at 'smart specialisation' as a useful concept for the growth of Cameroon. Smart specialisation is a developmental concept that is geared towards bringing about structural change by advocating the use of existing potential of endogenous resources combined with research and innovation. It requires regions to focus their resources on activities where they are suited or already performing well.

A smart specialisation strategy is a policy that jeers towards building on local strength, competitive advantages and potentials for excellence, as well as being able to support technological practiced-based innovation and stimulate private sector investment.

Through these policy tools regions are encouraged to invest in priorities where they have the resources to develop distinctive and original ideas; not only by imitating other successful regions but focussing on areas which they have unique potential to advance and compete. Regions and countries are expected to carry out a serious assessment of their knowledge, assets, capabilities and competencies and those involved on the process of knowledge transfer.

The tourism sector was brought-in in connection with smart specialisation as a means to get an in-depth understanding of how a possible strategy could be initiated and applied in a context with huge resource limitations. Tourism is an activity, because of its dynamics, that can create demands and instigate development. Tourism may also stimulate the emergence of clusters as groups of interconnected companies and associated institutions anchored in tourism and related domains, linked by commodities and complementarities in a geographical space, to enable knowledge diffusion and help put these entities in advantage when it comes to competition.

The article focussed on looking at possible areas of specialisation for the ten regions of Cameroon. An in-depth look was given into the tourism resources of Cameroon from a regional perspective. Innovation was also part of the discussion, Cameroon's framework for innovation, potentials to innovate, setbacks to innovation and competitiveness.

Smart specialisation in a developing country such as Cameroon can be a major driving force in improving the current infrastructure, aligning interests, and spreading economic activities but needs to be directly associated to economic activities that have expression in regional terms, stimulating related variety, and not being limited to efforts in STI where the country will necessarily fall behind.

As when this nation and their regions specialize in particular tourism products they should combine it with inputs from other institutions, government and universities. These regions are bound to have a competitive edge over others, thanks to information flows within available clusters found.

Results from this analysis were based in specialisation indices. Centre, Littoral, South West, West and Western regions have stronger performances in all dimensions. They are the regions that have more potential to develop tourism in articulation with training competencies looking at their general mean scores from the analysis. We would propose that development of tourism activities in each region should be carried taking into consideration the type of tourism resources and infrastructures available.

These indices were further used to develop tourism clusters taking into consideration the tourism resources each region has and also its territorial dimension relative to the trained population of each region. Based on the output of the cluster analysis, we finally decided to retain the option of selecting four clusters. As a result, and taking into consideration the tourism potential by territorial dimension, training and innovation capacity: The Adamawa, East, and South will fall in cluster 1 "Cameroon tourism wonders"; the Centre and Littoral in cluster 2 "Dynamic economic centres"; the Extreme North and North in cluster 3 "Subsistence regions", and finally the North West, West and South West regions in cluster 4 "Innovative (and English speaking) regions".

Different policies and priorities should be put into practice. While tourism is essential for cluster 1 regions, the advanced industrial fabric is concentrated in cluster 2 and highly innovative potential also in cluster 4. Cluster 3 regions face big problems because of very limited resources in the analysed dimensions. The subsistence character of its economy needs to be properly addressed or these territories will be pushed way from any real possibilities of growth and prosperity.

This work was heavily constrained by the lack of comprehensive data and limited literature on the subject, smart specialisation in tourism and in Cameroon in particular. More and better data and additional research into this topic, especially in the smart specialisation strategies in the tourism sector in developing countries is necessary.

On the part of governmental institutions, the benefit of implementing smart specialisation as a strategic policy tool that takes into consideration the regional potential is huge. It is a policy solution geared towards enhancing the already existing resources particularly suited for already leading regions high competitive advantages. In developing regions it may create new tensions even if in aggregated terms it would probably be very beneficial to Cameroon or other African countries in similar situations. To conclude, a reflexive note. The tourism of most African countries is a resource-based sector. As a resource-based sector, there is the need for governments to promote training of its citizenry and innovation for there to be proper utilization of these tourism resources. Only in this way tourism development will promote a sustainable economic development.

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