

# Entrepreneurship and Regional Development Analysis<sup>1</sup>:

## Evidence from Tunisia GEM Data

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**Abstract:** *This research is a contribution to empirical research on entrepreneurship. Indeed, this paper provides a detailed analysis of regional analysis of entrepreneurial activity in Tunisia based on 2009 APS data. We provide a short description of GEM's theoretical and methodological background. Also, we present the most important approaches to regional development with a particular focus on the relationship between entrepreneurship and regional development. Then, we apply a statistical analysis using APS data. The analysis of the several dimensions of regional entrepreneurial activity does indicate that start-ups creation does vary from one region to another. We conclude that the coastal regions Grand Tunis and Center-East have the highest early-stage entrepreneurial active involvement in technology-sector. This finding is correlated with the result that these two regions have also high level of knowledge and abilities combined with high levels of fear of failure. Regional analysis does conclude that, for all regions, business creation is more pronounced for male than female population. Nevertheless, the gender gap varies from one region to another. The lowest gap is observed in the Center East. We also show that for all regions, necessity early stage entrepreneurial activity is a rural characteristic while opportunity entrepreneurship is basically an urban phenomenon. Therefore, regional characteristics do not make any difference in this matter.*

**Keywords:** *Regional development, Adult Population Survey, Entrepreneurship, Global Entrepreneurship Monitor, Gender Gap, Urban-Rural, Nascent entrepreneurs.*

*JEL Classification: J23, R12, L26, L53, O43*

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## I. Introduction

We argue that modern growth theory ought to consider entrepreneurship as a growth factor in the same way as the classical factors such as capital, labor and technological progress.

This paper is a research piece based on data collected<sup>4</sup> as part of the Global Entrepreneurship Monitor (GEM) initiative that consider new venture creation as the essential activity of entrepreneurship in order to sustain growth and development and in particular regional development.

The Global Entrepreneurship Monitor (GEM) project aims to study the relationship between entrepreneurship and economic growth through a set of standardized measures and a common method for large number of countries.

The genesis of the GEM initiative was based on the observation that entrepreneurship has several insufficiencies such as:

- i) The absence of harmonized, internationally comparable data on entrepreneurial activity,
- ii) The lack of information on individual attitudes and perceptions of business opportunities and entrepreneurial framework conditions,
- iii) The scarcity of internationally comparable data on the business process for both nascent and established firms,
- iv) The inexistence of time series data set tracking over time the business process for a given country and allowing cross countries comparisons.

The literature has analyzed extensively the relevance of entrepreneurship and its social and economic effects.

Besides the social and economic impacts, entrepreneurship has also individual effects proper to the entrepreneur, such as earning an important income, personal achievements, and autonomy without omitting failure. Gartner (1989) defines entrepreneurship as the creation of new organizations.

Several studies such as (Reynolds *et al.*, 1997, 1999, 2001, 2005), consider that the GEM initiative is meant to provide empirical based answers to the following questions:

- To what extent does the level of entrepreneurial activity may vary between countries?
- How much does the level of entrepreneurship change over time?
- To what extent and why are some economies tend to be more entrepreneurial than others?
- What kind of policies may enhance the national level of entrepreneurial activity?
- What are the economic and social effects of entrepreneurship?

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<sup>4</sup> The authors would like to acknowledge the support of GTZ for making possible the collection of GEM data for Tunisia.

In a strict sense, entrepreneurship means owning and/or managing a business on one's own account and risk. It is widely admitted that entrepreneurial behavior refers to seizing an economic opportunity involving hence intrapreneurial activity.

Nonetheless, entrepreneurship activity is not only associated with the creation of a given firm, but may also extend to the development of research activity and new business opportunities in established firms.

Nevertheless, entrepreneurs may differ by motivations, growth aspirations and innovation behavior. Indeed, this set of criteria expresses different *quality of entrepreneurship*.

Therefore, we postulate that the contribution of entrepreneurship to economic growth may differ from one country to the other according to the available quality of entrepreneurship.

The aspirations of entrepreneurs may reflect the quality of entrepreneurial activity in a given country. The innovation (new products, new manufacturing processes, new organization), internationalization (foreign markets), and the ambition for growth (increase in capital and number of employees) are regarded as key to an entrepreneurial growth.

Similarly, entrepreneurship may contribute differently to economic growth, and hence to regional development, depending on the motive of the entrepreneur. Indeed, the literature considers that entrepreneurship may have several motives. In particular, we distinguish:

- i) An opportunity entrepreneurial attributable to a real career choice and the willingness to pursue opportunities in the market.
- ii) A necessity entrepreneurship is very much related to the social and economic environment such as high unemployment, unstable employment, low wage levels and social exclusion.

GEM evaluates innovation in entrepreneurial activity by asking the new and emerging entrepreneurs and established business owners of companies to assess, first, the novelty (or uniqueness) of their products or services based on assessments of potential customers. Secondly, entrepreneurs are asked to assess the degree of competition in the market (many, few or no other industry offer similar products or services). Nevertheless, innovation could not only be limited to new products and services and new markets, one may also consider innovation in the manufacturing process and the degree of involvement of businesses in high technology.

This research provides an analysis on the development of entrepreneurial activity in Tunisia and its potential impacts on economic growth and regional development.

The literature contains several empirical country studies exploring the determinants of inter-regional differences in new firm formation and business creation.

A number of methodologies have been used to assess the impact of regional characteristics on the business process. One way is to regress the dependent variable basically the rate of business creation on a set of variables measuring regional characteristics. An alternative approach focuses on the impact of personal characteristics, attitudes and regional characteristics on the decision to create or not a new business.

Entrepreneurship in general and start-ups in particular have become focal points in economic policy in Tunisia. Decision makers have quickly developed a range of initiatives and programs in order to stimulate economic growth and in the meantime reduce unemployment and to create an attractive business environment.

Indeed, the support for start-ups and business development turn into a high priority. In 2009 a network of structures has been established to support business creation. This includes nearly 80 structures covering all governorates of the country (25 incubators, 24 centers Business, 21 one stop shop 21 and 10 cells of spin-offs) that offer their services to nearly 10,000 new business promoters.

The rest of the paper is organized as follows: Section 2 presents the theoretical foundations underlying the GEM approach. Section 3 offers a theoretical Survey on entrepreneurship and regional development. Section 4 introduces the APS survey data used and provides overall descriptive empirical information on nascent entrepreneurship activities in the Tunisian economy. Section 5 proposes an overall analysis of the 2009 APS results for Tunisia. Section 6 investigates the regional factors and individual characteristics and their influence on entrepreneurship activity in Tunisia. Section 7 proposes an analysis of women entrepreneurship with a particular emphasis on regional factors. The last section concludes this work.

## II. GEM theoretical foundations

The Global Entrepreneurship Monitor model (GEM), first published in Reynolds *et al.* (1999), proposes a set of relationship between the various components of entrepreneurial involvement, namely established and new business activity, and economic growth activity.

The GEM model postulates that *national framework conditions* (NFC) may influence the level of entrepreneurial activity, by affecting the basis of *entrepreneurial framework conditions* (EFC).

In the GEM theoretical model, the entrepreneurial framework conditions (EFC) is characterized by a set of conditions related to finance, government policy, government regulations, government programs, education and training, research and development, commercial and legal infrastructure, internal market openness, access to physical infrastructure and social cultural norms.

Access to finance is a widely recognized condition for investment and thus for start-ups creation. It is clear that credit, savings and capital policy are privileged

instruments of entrepreneurial policy. So it is natural, that any entrepreneurial model needs to take into account of financial constraints, incentives and finance availability.

Government policy (industrial, innovation, SME etc.) is recognized explicitly as a key regulatory instrument of entrepreneurial activity. Therefore, its presence in the GEM theoretical foundation model is very well supported by the real interests of development policy to facilitate entrepreneurial activity. Nevertheless, this recognition does not rule out the likelihood of interference of entrepreneurial policy into entrepreneurial affairs.

Government regulations are considered as key external conditions for entrepreneurial activity. Usually, government regulation is associated with the idea of barriers to market entry by firms but also of regulating the functioning of the market in general. The debate would focus on the optimal amount and the duration of regulation to facilitate start-ups activity and thus to stimulate growth activity.

Government programs are considered as an important exogenous factor for entrepreneurial framework condition. The question is whether public programs may facilitate start-ups creation and produce enough incentives, resources and services in support to entrepreneurial activity.

Education and training, in support for entrepreneurship, has been subject to several studies investigating the effectiveness, content, level duration and pedagogical approach. The question is whether more education and training entrepreneurship oriented would provide more skilled entrepreneurs and intrapreneurs and more diffused entrepreneurial culture.

Research and development is certainly a very crucial external condition for entrepreneurship in relation to strategic choice by entrepreneurs in term of innovation and organization. The role of technological innovation and its transfer from research structures to business environment is widely admitted and can not be addressed without reference to incentive structure and the level of protection of private R&D as well as the cost of innovation.

The commercial and legal infrastructure is an exogenous condition corresponding to all business services in support to entrepreneurial activity and in particular to satisfy managerial needs in term of Commercial and Legal Infrastructure services.

Internal market openness is related to the market structure where the firm is supposed to evolve and interact. Thus, market dynamics, including entry and exit, may constitute an important factor external to the firm that could very well influence the decision to start-up a business as well as the profitability or the opportunity to undertake a new business.

Physical infrastructure, economical as well as social, is a key exogenous element that influences naturally the decision to undertake new economic affairs. Clearly, any deficiency in the transportation, internet and communication and energy network will clearly slowdown or even prevent new entries in the market.

Social and cultural norms are external to entrepreneurship activity. Nonetheless, national culture and values may impede entrepreneurial developments in a given country.

It is important to remind that entrepreneurship is a process of identifying, assessing and exploiting business opportunities. This process often leads to the creation of a new company.

The question is how to identify a new firm? One possible answer when it enters business registration official statistics? Or when it realizes its first commercial transaction? Or when you have a business plan and a product to offer?

In a schematic way, early stage business creation process has two phases:

- i) an emerging phase during which the business concept is refined, the resources are assembled and the team is formed,
- ii) a starting phase during which the new company begins selling its products and services and makes them known on the market.

However, entrepreneurship activity is not only associated with the creation of a given firm, but may also extend to the development of research activity and new business opportunities in established firms.

The entrepreneurial GEM model includes the following key variables:

The GEM approach distinguishes three stages of entrepreneurship:

- i) The *emerging entrepreneurs (nascent entrepreneurship)* corresponding to individuals working on business projects in the pipeline. These are entrepreneurs who are leading concrete actions to create such as writing a business plan, search for funding, customers, etc.
- ii) The *new entrepreneurs (baby business)* corresponding to owners or business leaders who have paid wages less than 3 ½ years at the time of the survey.
- iii) *Established entrepreneurs* corresponding to business owners or else business leaders who have paid salaries for more than 3 ½ years at the time of the survey. This category covers a broad range of individuals being independent entrepreneurs working alone to owners of family businesses leaders.

The rate of entrepreneurial activity "Early-stage Entrepreneurial Activity (TEA) is the main general indicator of entrepreneurial activity. This rate is the sum of the rate of entrepreneurial activity of emerging entrepreneurs and new business rates.

### III. Entrepreneurship and Regional Development: A Theoretical Survey

The literature has analyzed extensively the relevance of entrepreneurship and its social and economic effects in particular its regional effects.

The theoretical explanation of technology-oriented regional economic growth was one of the most controversially discussed topics of the literature (e.g., Thompson, 1989; Rees and Stafford, 1986; Scott and Storper, 1987).

Steinberg (1996) provides theoretical explanations and empirical evidence for the emergence of high-tech regions, in Germany.

It is important to mention that the early eighties have been marked by the emergence high-tech regions such as Silicon Valley (US), Munich (Germany), Grenoble (France) and Western Crescent (Great Britain).

Steinberg (1996) argues that an *eclectic theory* offer the best approach to explain technology based regional growth. Accordingly, governments implicitly or explicitly may influence on high-tech regions. This idea goes stresses the idea of applicability of the work of Porter (1990) on the system of determinants of national competitiveness to high-tech regions.

The product cycle hypothesis is one of the competing theories to explain regional development. Accordingly, products and industries undergo three phases a genesis and introduction phase, a growth phase and a maturity or standardization phase. Each phase is characterized by a given market structure, competitive position, size of enterprise; and specific demands on the location factors (Malecki, 1991, Tichy, 1991, Rees and Stafford, 1986).

Vernon (1966) was the first to develop a spatial variant of the product cycle hypothesis. Spatial demands of inputs factors such as labor, R & D input determine the decision to choose production location. As the aging process progresses, process innovations reduces cost and may increase the need to decentralized locations decisions.

The Theory of the Long Waves of economic development is fundamentally based on the works of Kondratieff (1926), Schumpeter (1939) and Freeman *et al.* (1982). The theory of the Long Waves considers that long term economic development is subject to cyclical fluctuation mainly attributable to technological innovations. Each cycle, with variable length, involves economic growth, prosperity, recession and depression. Cycles are due to basic innovations by entrepreneurs in new technologies leading to the genesis of new industries. Recent authors identify regional Long Waves, in the sense that economic regions also develop in cycles. According, each long wave creates its own new regions.

The milieu theory<sup>5</sup> stipulates that innovative enterprises are the outcomes of a dynamic process set by a network of enterprises, individuals and institutions in a given region. Spatial proximity may permit a learning process, contacts and a collective risk management of technological change. These synergies may lead to the formation of regional networks of enterprises or growth poles (Aydalot and Keeble, 1988; Maillat *et al.*, 1993). The particularity of the milieu theory compared to the network analysis is that public policy and institutions count as an important impacting factor on innovative activity compared to the network theory. (Lonighi and Quere, 1993).

The theory of flexible specialization and production postulates that the genesis of industrial regions is attributable to the change in forms of organization of new industries. Accordingly, industrial regions appear as a consequence of the growth of the industries looking for locational opportunities. It is not necessarily the existing spatial characteristics that are responsible for the development of a region.

After a short description of GEM's theoretical and methodological background, Sternberg and Wennekers (2005) show that the impact of entrepreneurial activity

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<sup>5</sup> Originated in ideas developped in the GREMI *groupe de recherche européen sur les milieux innovateurs*.

differs across the stages of economic development and may differ from one region to another?

Regions may differ according to the typology of entrepreneurship and accordingly to the impact that may have on economic growth on the regions. It is important to take into consideration the regional framework conditions, including networks and regional policies.

Based on GEM APS data, Bergmann and Sternberg (2007) provide an analysis of entrepreneurship activity in Germany in a regional context. In particular, the authors attempt to explain the influence of regional and individual characteristics on the decision to undertake entrepreneurial activities. Results vary depending on the type of entrepreneurship.

In their work, Wagner and Sternberg (2002) attempts to test the idea that business creation differ between regions and that decision to create start ups depends on socio-demographic and individual parameters such as risk attitude, business environment, degree of schooling, with application to Germany. Using a sample of 10000 individuals from a population survey in ten German regions (regional entrepreneurship monitor REM), they conclude that self employment behavior is positively influenced regional rate of growth. Nonetheless, risk aversion plays a negative impact on the rate of entry.

We note that the literature, dealing with the regional dimension of entrepreneurship, uses either aggregate and/or individual data.

Comparing results, from several countries (France, Germany, Italy, Sweden, the UK, and the US), Reynolds, Storey and Westhead (1994), show that start-up creation process may vary from one region to another within the same country.

Wagner and Sternberg (2002) make use of a probit model, based on a sample of 10.000 individuals stratified by region, to study regional variations in entrepreneurship activity for Germany. Precisely, the authors attempt to answer the following questions:

- i. Does there exist regional differences in the decision to start a new business in Germany taking into account personal characteristics and attitudes?
- ii. In the case region matters, what are the particularities of regional effects?
- iii. How the decision to start a new business is affected by regional characteristics?

The results found show that both the personal and the regional determinants turn out to be important and thus economic policy measures may be implemented to foster entrepreneurship in a region and influence thus regional development.

Rocha (2004) analyzes the relationship between clusters, entrepreneurship and regional development. The results show that entrepreneurship is positively related with growth. Nevertheless, the effects of entrepreneurship on economic and social structure and thus on development need to be analyzed with more details. The author concludes that it is difficult to provide a general assessment on the impact of clusters on entrepreneurship and development. The author argues that future studies ought to sort out the impact of clusters on entrepreneurship, development and the association between entrepreneurship and development.



Several authors attempt to answer the question whether clustered entrepreneurial activity contribute to development more than non-clustered?.

Porter (1998) define cluster as a geographically close group of firms and institutions in related industries which are economically and socially linked.

Several types of clusters may be distinguished such as industrial districts, scientific parks. Several studies have studied the different impact of these specific types such as Visser (1999) and Sorenson and Audia (2000) among others.

Indeed, the emphasis on the role of clusters in regional development expresses the growing shift from mass to flexible production, from independent firm-based to regional network based system (Castells, 2000). Such emphasis increases the importance of the debate on the impact of the creation of new firms which are geographically close and economically and socially linked. Therefore, entrepreneurial clustered activity may have an economic impact on growth and regional development. In the meantime, economic policy by helping developing the economic environment (institutions, programs, measures) could play a key factor to make entrepreneurship play its role in term of growth and regional development (Reynolds et al., 2001). In addition, different regions have different characteristics and thus entrepreneurship may play different roles in term of regional development.

Levie and Autio (2008) argues that the relationship between national-level new business activity and the *entrepreneurial framework conditions (EFC)*, is mediated by opportunity perception and the perception of start-up skills in the population. Their results, based on GEM 2000–2006 dataset, show that in high-income countries opportunity perception capture fully the link between the level of post-secondary entrepreneurship education and training in a country and the rate of new entries.

#### IV. Data Description

In this paper, we use original data, from the adult population survey of the Global Entrepreneurship Monitor initiative in Tunisia, to analyze regional characteristics of entrepreneurial activity and their consequences in term of regional development.

The Global Entrepreneurship Monitor (GEM) project was developed originally in 1997 by researchers from the London Business School in the UK and Babson College in the USA. This project aims to explore the complex relationship between entrepreneurship and economic growth through a set of standardized measures and a common method for all members of the consortium.

Each year, the results of the study are published in GEM both in a global report by the coordinators of the project and partly by each team member of the consortium published a national report for each participating country.

Ten countries participated in the first study conducted in 1999. Today, there are 56 GEM countries. 54 of them have participated in the GEM study in 2009. Tunisia participates, in this global project, for the first time in 2009.

Prior research has shown that the relationship between entrepreneurship and economic development depends on the different stages of economic development. In the GEM project countries are ranked according to the Report's overall competitiveness of

the World Economic Forum in 2008-2009 (World Economic Forum Global Competitiveness Report's) in three categories according to their stage of economic development: *factor-driven*, *efficiency-driven* and *innovation-driven*. Tunisia is classified among the category of *efficiency driven economies*.

Basically, a typical GEM study uses three main sources:

- i. A telephone survey, called the Adult Population Survey (APS), with a representative sample of 2000 people aged 18-64 years based on a standard questionnaire about their participation and attitude vis-à-vis his or her entrepreneurship activity.
- ii. A set of interviews with 36 Experts called the National Expert Survey (NES), selected according to their expertise and reputation in term of the framework conditions for entrepreneurship (funding, policy, programs and actions specific education and training, transfer of R & D, legal and commercial infrastructure, physical infrastructure, domestic market, social and cultural norms).
- iii. A set of standardized national data produced by international organizations the OECD, the World Bank, International Monetary Funds and International Labor Office.

The essential of this research work will be based on the results on the 2009 APS data. In this framework, we made up a random sample of 2000 individuals stratified in three ways:

- by region: Grand Tunis, North East, North West, Centre East, Center West, Southeast and Southwest;
- by milieu, rural and urban;
- by gender, female and male

In total, we have 28 strata. We draw randomly with a rate of 3% a representative sample of a population of 5,804,672 Tunisian aged between 18 and 65.

Our sample is composed of 51% male and 49% female, distributed over the seven regions of the country and by area urban and rural and according to five age groups. This distribution of this sample adequately represents the population and thus allows making appropriate inference and extrapolation.

This distribution clearly indicates a strong population concentration in the regions of Grand Tunis and the Centre East. Also, we note that over 50% of the individuals in the sample are aged between 18 and 34 years. The active population of 18-64 years is relatively young population with over 76 % under 44 years. Moreover, the majority of individuals (63%) have either a primary or a secondary education level.

## V. An overall examination of 2009 APS Results

The GEM study seeks to measure the entrepreneurial activity in a given country by estimating the number of people who are in the process of creating new businesses and those just establishing a business. The definition of entrepreneurship according to the GEM approach also recognizes that entrepreneurship is growing in established companies such as creating a new division or subsidiary for manufacturing and

marketing of new products or services. Thus, GEM has introduced two specific indicators to measure this activity:

- The rate of nascent entrepreneurship allows us to have an idea on business in gestation in which one or more persons being engaged in a process of creation (business plan, design patent, seeking finance ...),
- The rate of new business tells us about the new businesses under the age of 3 ½ years (paying wages) at the time of the survey.

GEM methodology focuses specifically on early phases in the entrepreneurial process. Thus, the overall rate of entrepreneurial activity (TEA) is presented as the sum of two rates cited above.

APS results for Tunisia shows an overall rate of entrepreneurial activity (TEA) 9.4% which is average of countries with average income level (Efficiency Driven Economies). This rate is up 2.2% of emerging entrepreneurship (start-up business) and 7.2% of new entrepreneurship (Baby Business).

Tunisia has a rate of 2.2% of start-ups (SU: Start-Up business) and a rate of 7.2% of new businesses (BB: Baby Business). A simple inference shows that the number of emerging companies is estimated, at 95% confidence level, between 90,321 and 165,073 businesses. As far as new businesses are concerned, this number ranges between 352,053 and 483,761.

By combining the two rates, one obtains a TEA of about 9.43% which is within the average middle-income countries (Efficiency Driven Economies) to Russia, Malaysia South Africa, Romania, Serbia, Croatia and Hungary.

However, the level of male entrepreneurship is about three times higher than that of females. This gender gap is observed for all countries except for Tonga, Guatemala and Brazil. This gender gap is even more significant for industrialized countries.

In terms of age, more than half of entrepreneurs in Tunisia are in the age group 18-34 years. Thus, the class 25-34 is characterized by the highest rate of entrepreneurial activity. This is also observed for most of the participating countries.

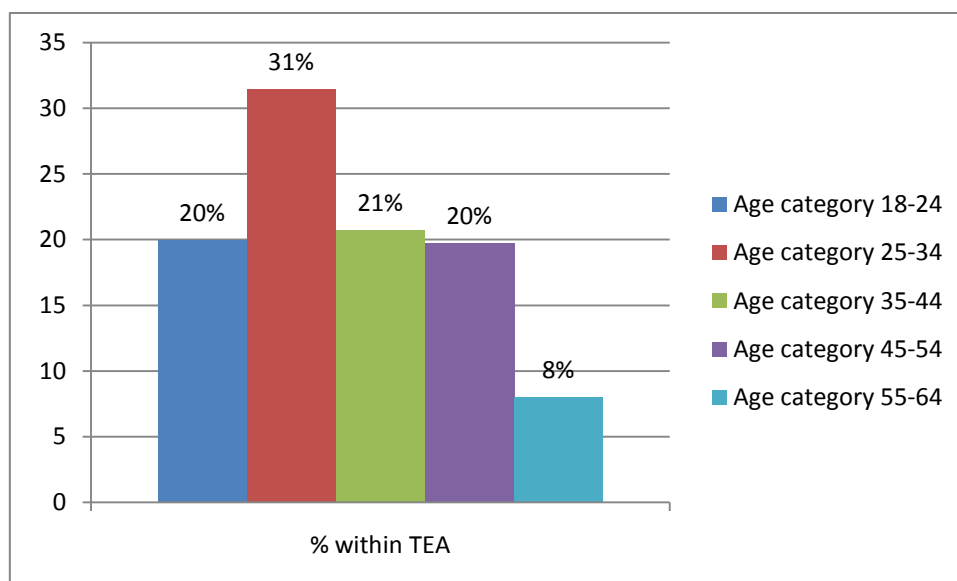


Figure 1: Distribution of new and emerging entrepreneurs by age

It is also noteworthy that entrepreneurial activity varies depending on the level of education of the adult population of Tunisia. The majority of entrepreneurs, nascent and established or new, have a secondary or primary school level.

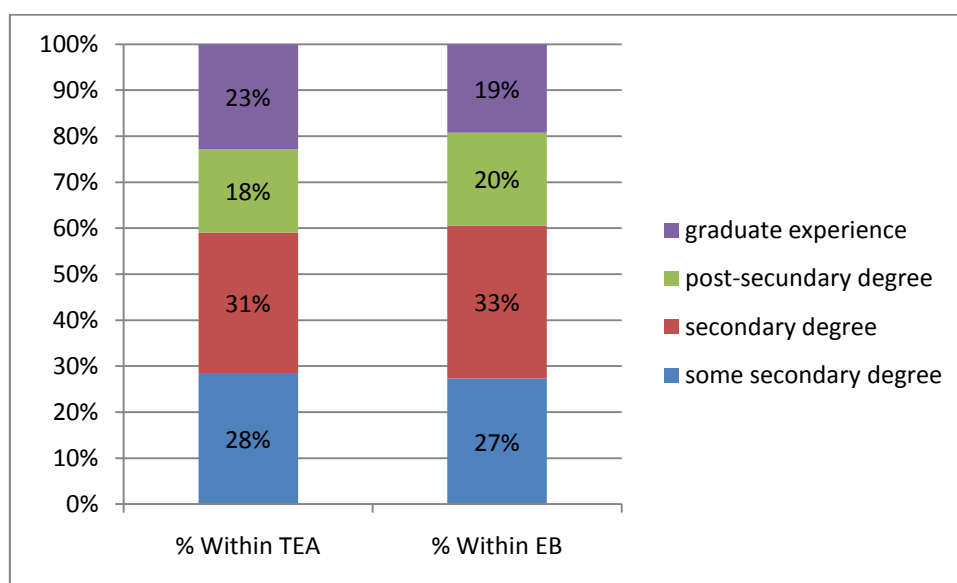


Figure 2: Distribution of persons involved in the TEA and EB by education level

APS results also show that 10.2% of adults are businesses owners (i.e. in business for over 42 months). Like most of the GEM participating countries, this rate seems quite advantageous and reflects the favorable conditions for business survival. This idea is supported by a low closure rate (2.7%). Failure is attributable mainly to reasons related to the profitability of the project, access to finance and to personal reasons such as illness, loss and other adverse social conditions.

## V.1. Entrepreneurship by Age and Gender

Entrepreneurial activity in Tunisia, as measured by the overall TEA varies to a great extent by age and sex. APS results show a wide disparity between the TEA for male and that for female with respectively a rate of 13.74% and 5.08%. Thus, male entrepreneurship is three times higher (73%) than female entrepreneurship (27%). This result is not specific to Tunisia but it is almost the case of almost all countries except for Tonga, Guatemala and Brazil. This difference is most notable for giving industrialized countries.

In terms of age, more than half of entrepreneurs are comprised in the age group 18-34 years. The class 25-34 is characterized by the highest rate of entrepreneurial activity. This also is observable for most countries.

## V.2. Established Entrepreneurship

Owners of established businesses owned and controlled business that has been established in business for over 42 months. High rates of established business ownership could grant positive conditions for business survival provided that the high level of established entrepreneurship needs to be accompanied by a sufficiently high level of new venture.

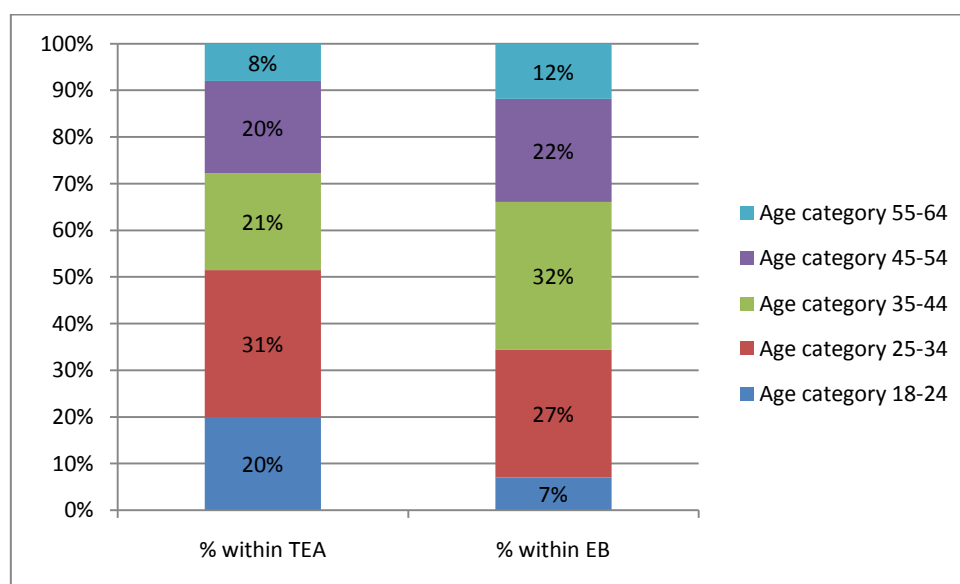


Figure 3: Percentage within TEA and EB Rates by Age

In Tunisia, 10.2% of persons aged between 18 and 64 are owners of established businesses. In contrast, age category 35-44 years is characterized by a high rate of established businesses. We could argue that established entrepreneurship is not the matter of young individuals but rather it is almost exclusive to relatively advanced age individuals. Early stage entrepreneurial activity is more an early age occupation. This is explained by the need for maturity of the entrepreneur in order to insure sustainability of business activity.

### V.3. Entrepreneurship by Education Level

The rate of entrepreneurial activity depends on the level of education of the adult population in Tunisia. The majority of entrepreneurs, nascent and established or new, have a secondary or primary school level. They are usually the son or daughter of entrepreneurs who have left school or college to take up business on their parents. We also note an important new generation of university graduates more and more oriented toward entrepreneurial activity. This confirms the tendency of university students to pursue self-employment economic activities and business start-ups.

### V.4. Entrepreneurship by Motivation

Entrepreneurship in Tunisia is more motivated by opportunity than necessity. Indeed, 77.7% of entrepreneurial activity is opportunity and only 23.3% is necessary. The results also show that 71.1% of male entrepreneurs are motivated by market opportunities while this rate is around 66.5% for women. This choice of entrepreneurial opportunity is dictated more by the search for high incomes rather than for more independence and freedom. With an opportunity TEA of 6.6%, Tunisia holds a middle position among the efficiency driven economies.

When asked individuals who consider entrepreneurship as a career choice as their primary motivation, more than 66% pronounce that they created their companies to increase their income, rather than to have more independence and freedom.

Furthermore, results show that the distribution of entrepreneurs by motivation differs slightly depending on the nature of business. The data indicates that entrepreneurship in Tunisia is largely an opportunity one. New entrepreneurs, both the nascent and the established entrepreneurs, are more likely to pursue the opportunities offered by the market.

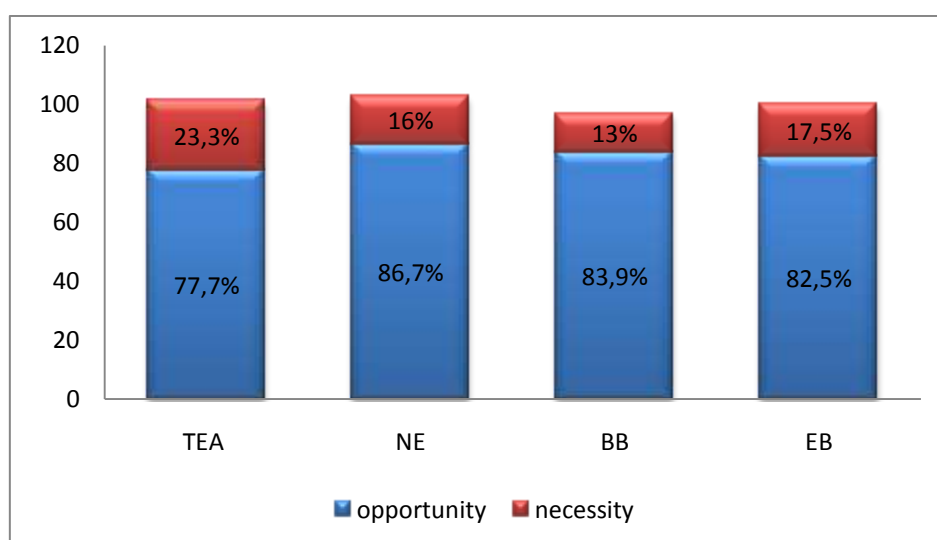


Figure 4: Distribution of persons involved in TEA, New Entrepreneurs, Baby Business, and Established Business by Motivation

## V.5. The perception of entrepreneurship in the population

Several studies have shown that entrepreneurial activity is highly correlated with the social environment of the entrepreneur. Indeed, individuals who are acquainted with someone who created a business may have less fear and more incentive to start his own business.

APS results show that 37% of adults in Tunisia know a person who creates a business over the past two years. These personal relationships could provide support for business creation. Also, 40% of respondents affirm that they have enough skills and experience needed to start an enterprise. Nonetheless, the risk of failure is a limiting factor in the domain of business creation. In Tunisia, only 24% of the population between 18 and 64 fears the risk of failure. This finding support business creation efforts and also the good image of the entrepreneur in Tunisian society.

## V.6. Growth aspirations of entrepreneurs

In terms of growth aspirations, results show that 7% of all those involved in entrepreneurial activity are planning to recruit 10 new employees over the next 5 years. Among the individuals involved in entrepreneurial activity, 61% expect to create between 1 and 5 jobs, while 19% aspire to create between 6 and 19 jobs and only 12% intend to hire more than 20 employees. We note that nascent entrepreneurs are more optimistic about employment as they are planning a rapid growth as witnessed by their intentions to recruit at least 20 new employees over the next 5 years.

The GEM study results reveal that the average job creation by new and emerging businesses within 5 years is about 2.35 jobs. Thus, by a simple inference, one could estimate that early stage entrepreneurs expect creating around 1,285,000 jobs in the next 5 years. On the other hand, established firms are planning to create about 1.38 million jobs in the following five years.

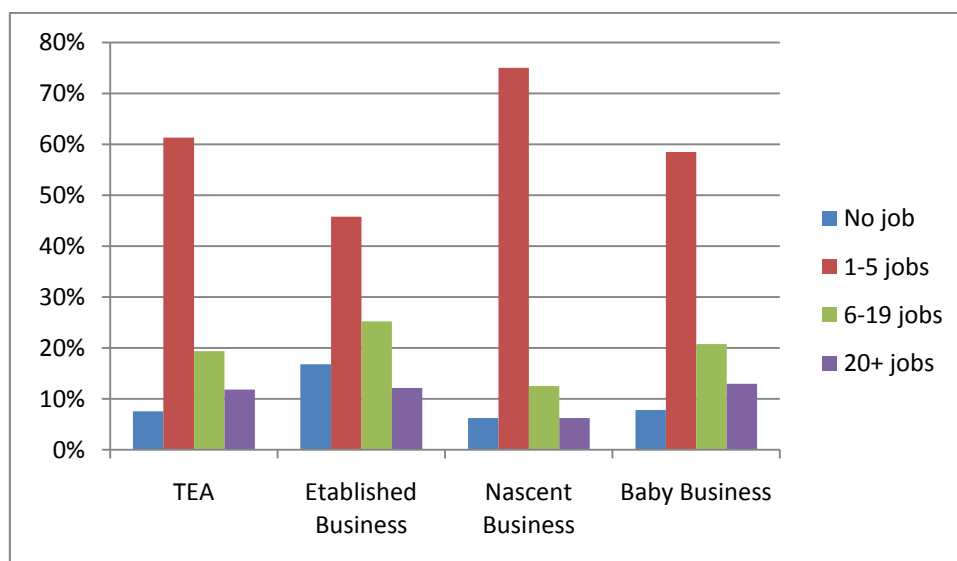


Figure 5: Expected number of jobs in 5 Years

### **V.7. Entrepreneurship and Innovation orientation**

GEM evaluates innovation in entrepreneurial activity by asking the new and nascent entrepreneurs and established business owners of companies to assess:

- i. First, the novelty of their products or services based on assessments of potential customers.
- ii. Second, each entrepreneur is asked to evaluate the degree of competition in the market (many, few or no other industry offer similar products or services).

Nonetheless, innovation is not only limited to new products and services and new markets. Indeed, one could also consider innovation in the manufacturing process and the degree of involvement of businesses in high technology.

In Tunisia, only 14.5% of emerging entrepreneurs offer a product or service they think to be novel to some or all customers and they also believe that there is little or no business offering the same product on the market. This indicator is much lower for owners of established businesses.

One may argue that entrepreneurship is turn out to be more innovative. We note that new start-ups by offering new products and services and using new technologies are more competitive and would expand market growth as well as established businesses. The emergence of innovative entrepreneurship could be explained by the impact of globalization and to cope with the repercussions of the recent economic crisis.

In addition, results show that the majority of nascent firms, new or established are mainly business services oriented for the consumer.

### **V.8. Entrepreneurship and International Orientation**

The results show that only 10% of the production of goods and services for nascent, new and established firms are oriented toward international markets. However, domestic consumers are the primary customers of these enterprises. We note that there exist only 1% of entrepreneurs, mainly emerging which more than 75% of their activities are internationally oriented.

### **V.9. Discontinued Entrepreneurship**

In Tunisia, 4.9% of the new entrepreneurs, aged between 18-64, have quit their business during the last 12 months. Indeed, 2.2% of entrepreneurs exit their business while their businesses continue to exist and 2.7% have experienced a closure.

Also, 45% of these entrepreneurs run off their business while their businesses continue to exist. On a related ground, only 7.5% of those entrepreneurs having opportunities to sell their business or other business opportunities have found their new job occupation more interesting.

We argue that this business transfer is primarily attributable to various reasons: 48.6% reported that business is unprofitable, and 24.4% have encountered funding problems and 19.5% experienced an incident travel or personal reasons may be primarily due to illness, loss and other adverse social conditions.



However, 55% of these entrepreneurs, who quit their affairs, have failed of course and therefore they have closed their businesses for various reasons: 51% said that business was not profitable, 17% claims insufficient funding and 32% left their business for personal reasons primarily health problems, losses and other adverse social conditions.

## VI. Regional Aspects of Entrepreneurial Activity

Regional analysis business activity aims to detect the existence of regional disparities in business, or in the profile of the entrepreneur's choice of economic activity and in the framework conditions, such as finance, infrastructure, programs, support structures, women's entrepreneurship, entrepreneurship of necessity entrepreneurship of opportunity, etc.

### VI.1. Early-stage entrepreneurial activity in regions

The analysis of early-stage entrepreneurial activity in Tunisian regions shows that Grand Tunis, North East and North-West and in particular Midwest have the highest entrepreneurial activity rates in the country.

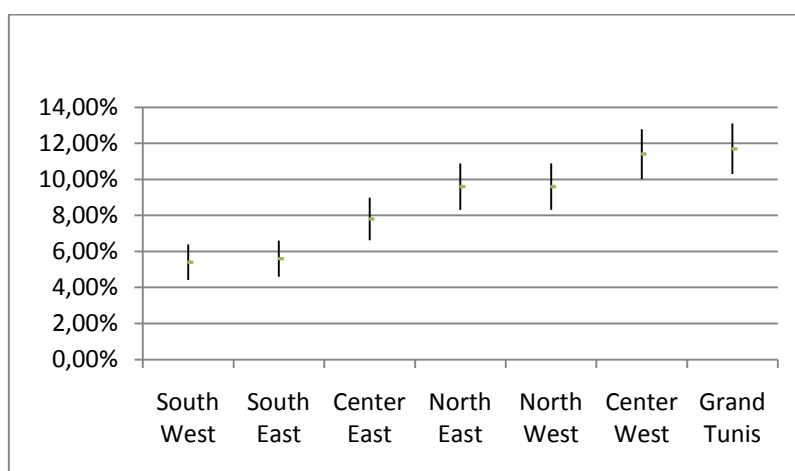


Figure 6: TEA by region, showing 95% Confidence intervals

A more thorough analysis of the TEA for Tunisian governorate, one could mention that the position occupied by the Center West region is heavily influenced by the high rate of TEA for the governorate of Sidi Bouzid. The following figure illustrates that the middle position in term of entrepreneurial activity hold by the North East region is mainly due to the high level of necessity entrepreneurship in the governorate of Siliana.

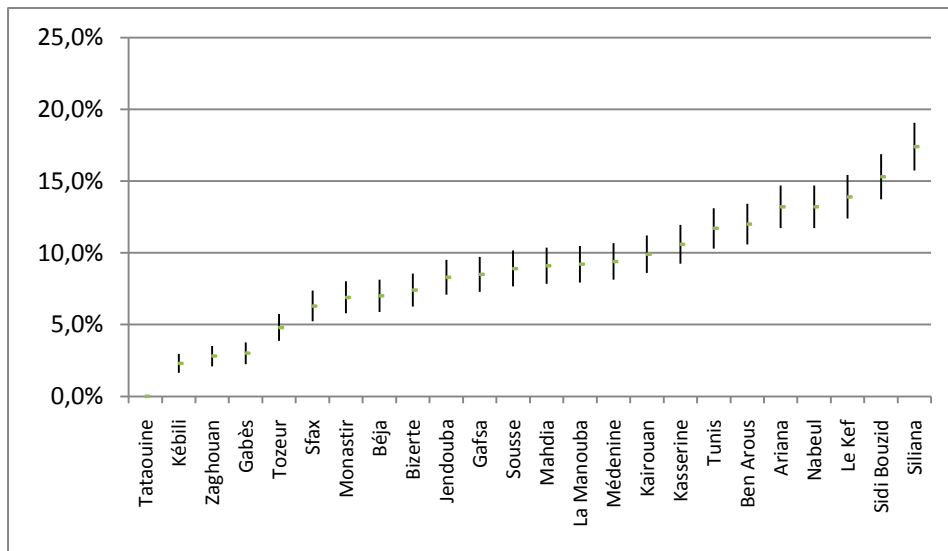


Figure 7: TEA by Tunisian cities, showing 95% confidence intervals

It is worth mentioning that entrepreneurs often find in their economic interest to start their opportunity affairs along the east coast to have easy access to conditions of economic infrastructure such as transportation networks (road, sea, air) and especially for skilled labor.

Apart from the southern regions, being particularly arid, the Center East region has one of the lowest TEA (7.8%) of the country despite its privileged geographical location. This result, somewhat surprising, is unquestionably due to the nature of the economic region being predominantly a prime touristic attraction. This type of economic activity is very labor intensive which naturally reduces unemployment flows. Nonetheless, it is important to notice that, these results should be taken with caution. Employment in the touristic sector is rather characterized by seasonal and cyclical factors. Future studies should take into account the time span of the year when the survey is conducted in order to control for seasonal factors.

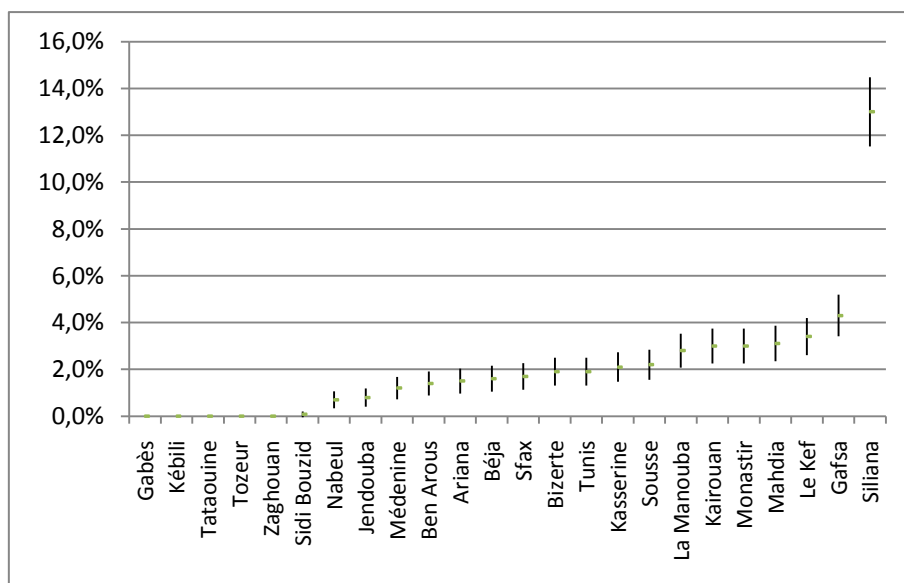


Figure 8: TEA Necessity by Tunisian cities, Showing 95% Confidence intervals

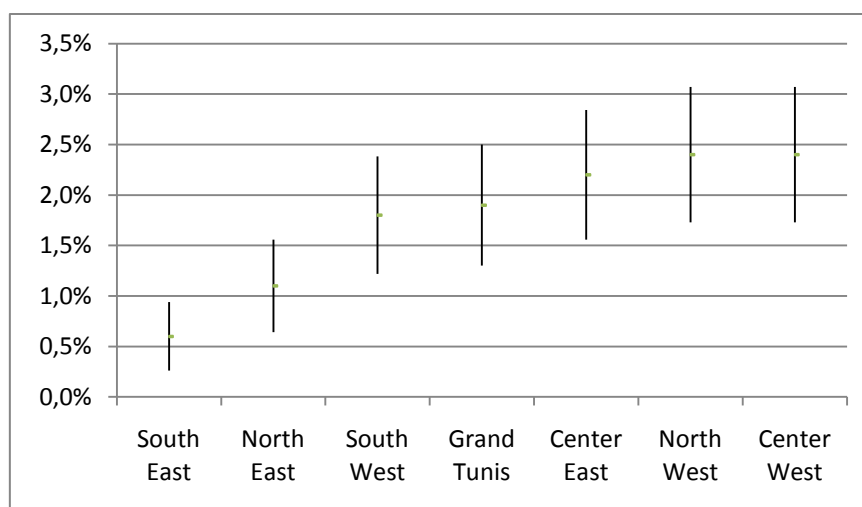
## VI.2. Regional Entrepreneurship by Motivation

It is important to understand the nature of the regional distribution of entrepreneurial activity by motivation. Indeed, one would question whether undertaking entrepreneurial activity is dictated by a real career choice and the pursuit of market opportunities or constrained by high unemployment, unstable employment, and low levels of remuneration and thus motivated by necessity.

**Table 1: Prevalence rates of entrepreneurial activity for Tunisian regions by motivation**

Region	TEA	TEA Opportunity	TEA Necessity	Necessity/ Opportunity
<b>Grand Tunis</b>	11,7%	8,3%	1,9%	4
<b>North East</b>	9,6%	8,2%	1,1%	8
<b>North West</b>	9,6%	6,0%	2,4%	3
<b>Center East</b>	7,8%	5,1%	2,2%	2
<b>Center West</b>	11,4%	7,5%	2,4%	3
<b>South East</b>	5,6%	3,9%	0,6%	7
<b>South West</b>	5,4%	3,6%	1,8%	2
<b>Country</b>	<b>9,43%</b>	<b>6,6%</b>	<b>1,9%</b>	<b>4</b>

Entrepreneurship activity in Tunisia is more of opportunity rather necessity. The ratio of opportunity TEA over necessity TEA measures the relative amplitude of the opportunity entrepreneurship compared to that of necessity. The above table illustrates that opportunity early-stage entrepreneurial activity in North and South East regions is 8 times more important than that of necessity.



**Figure 9: TEA Necessity by region, showing 95% Confidence intervals**

On another level, the North-east and Grand Tunis have the highest TEA opportunity and this is due to obvious reasons of geographical location. The proximity to service oriented business and physical infrastructure such as transportation networks constitute an incentive to economic agents to create their own businesses. The diversity of industries also promotes entrepreneurial opportunity. This type of business creation is the consequence of strong career aspirations that are originally identified as a market opportunity.

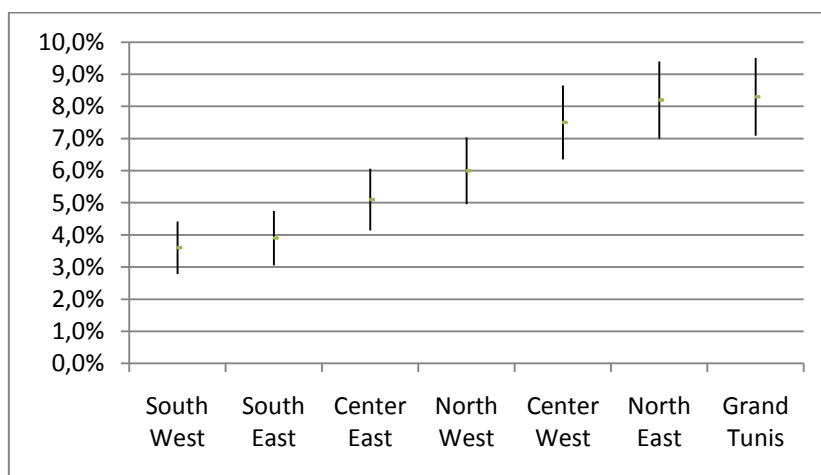


Figure 10: TEA Opportunity by region, showing 95% Confidence intervals

Necessity entrepreneurship motivates business creation as a self-protective reaction to the situation of the labor market and/or personal difficulties of the potential entrepreneur.

In our opinion, we believe that necessity entrepreneurship requires the implementation of *effective* support structures and information cells. In this regard, we would like to stress the need for a complex know-how and engineering to be acquired by agents and personals providing this support.

The results show that the Centre West region has the highest necessity TEA. This is clearly an important entrepreneurial activity aimed at stabilizing individual income rather its development. This is explained by the nature of the economic tissue of the region and in particular the scarcity of large industrial groups in this region with all the consequences in terms of jobs and income. In situations such as these, and to cope with financial problems and survival difficulties, economic agents tend to get more involved in necessity entrepreneurial activity. They start their own micro businesses to stabilize their income and to overcome the lack of opportunities of jobs and affairs.

Furthermore, looking at the motivations of entrepreneurial activity at the regional level, we find that the Center West region has the highest necessity TEA. This denotes an important entrepreneurial-oriented activity aimed at stabilizing the income rather than growth. On another level, the opportunity TEA is the highest for the North-East and Grand Tunis regions and this is due to obvious reasons of geographical location.

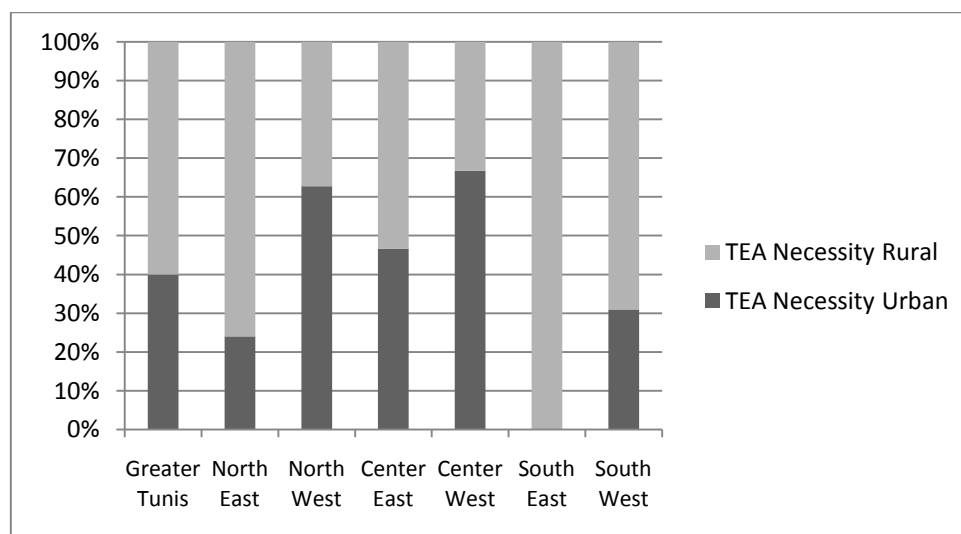
#### VI.4. Urban-Rural Analysis of Regional Entrepreneurial Activity

In the following, we deal with the environmental dimension urban-rural to analyze the regional aspects of entrepreneurial activity.

**Table 2: Prevalence rates of Early-stage entrepreneurial activity by area and motivation**

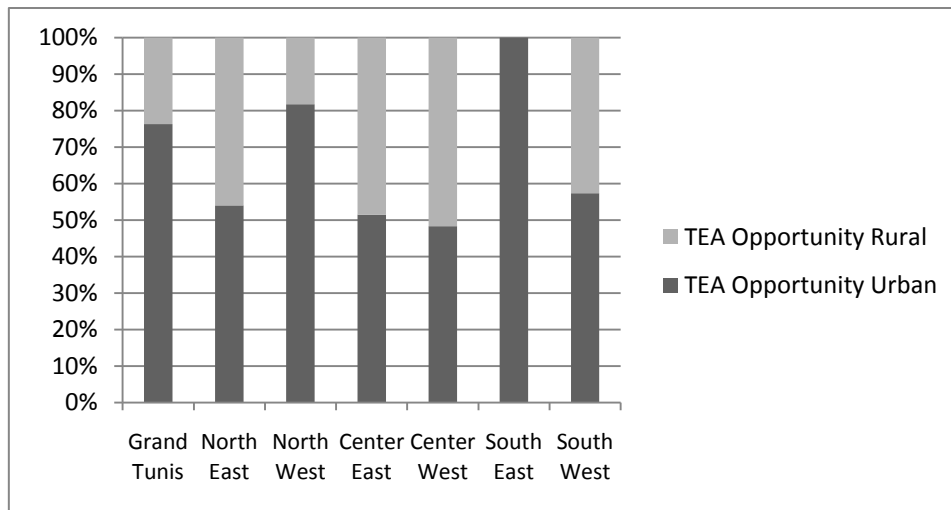
Regions	TEA		TEA Opportunity		TEA Necessity	
	Urban	Rural	Urban	Rural	Urban	Rural
<b>Grand Tunis</b>	12,0%	8,1%	8,7%	2,7%	1,8%	2,7%
<b>North East</b>	9,3%	10,2%	8,7%	7,4%	0,6%	1,9%
<b>North West</b>	16,8%	5,1%	11,6%	2,6%	3,2%	1,9%
<b>Center East</b>	7,9%	7,3%	5,2%	4,9%	2,1%	2,4%
<b>Center West</b>	13,1%	10,6%	7,1%	7,6%	3,6%	1,8%
<b>South East</b>	6,2%	4,0%	5,4%	0,0%	0,0%	2,0%
<b>South West</b>	5,2%	5,7%	3,9%	2,9%	1,3%	2,9%
<b>Country</b>	<b>10,1%</b>	<b>7,8%</b>	<b>7,3%</b>	<b>4,9%</b>	<b>1,7%</b>	<b>2,1%</b>

Clearly, the results show that for all regions, the rate of necessity early stage entrepreneurial activity is a rural characteristic while the above figure shows that the rate of opportunity entrepreneurship is basically an urban phenomenon.



**Figure 11: Early-stage necessity entrepreneurial activity in regions by area**

Visibly, necessity entrepreneurship is mainly a rural phenomenon where there exists a relatively less opportunity of business and employment compared to cities and more generally urban areas.



**Figure 12: Early-stage opportunity entrepreneurial activity in regions by milieu**

In contrast, the above figure shows that opportunity entrepreneurship is predominantly an urban factor for all regions. Regional characteristics do not make any difference in this matter.

Also, results show that the highest observed TEA is for both female and male is observed in urban areas. This would be explained by the proximity of production factors such as human capital, transportation networks, administrative infrastructure, etc.

We also note that there is no difference based on gender both in rural as well as in urban areas. The relationship between the TEA urban and TEA rural for both male and female is almost identical.

The most important result is precisely the importance of necessity entrepreneurship in rural areas. Indeed, the data confirm the finding that both Southwest and Midwest regions, also known as being very rural areas, do not offer enough job opportunities compared to east coast regions. Therefore, it is clear that starting up micro or even small businesses, and in particular in the agriculture sector, yields an entrepreneurship of necessity for survival. Government programs and structures play a key role to support such entrepreneurial activity and also to provide the technical support, assistance and engineering to make these economies viable and sustainable.

### **VI.5. Regional entrepreneurial activity By Stages:**

The GEM approach distinguishes three stages of entrepreneurship namely: the nascent entrepreneurship, new entrepreneurship, established entrepreneurship. Based on this GEM decomposition, our results show the following regional distribution of entrepreneurship by level:

**Table 3: Several stages of regional entrepreneurial activity**

Regions	Nascent entrepreneurs	Nascent entrepreneurs Male	Nascent entrepreneurs Female	Baby Business	Established Business
<b>Grand Tunis</b>	4,3%	5,9%	2,6%	7,4%	7,4%
<b>North East</b>	1,5%	2,9%	0,0%	8,2%	8,2%
<b>North West</b>	1,3%	1,7%	0,8%	8,4%	8,4%
<b>Center East</b>	1,4%	1,4%	1,3%	6,4%	6,4%
<b>Center West</b>	3,3%	5,0%	1,5%	8,3%	8,3%
<b>South East</b>	0,6%	1,2%	0,0%	5,0%	5,0%
<b>South West</b>	1,9%	3,7%	0,0%	3,6%	3,6%
<b>Country</b>	<b>2,2%</b>	<b>1,3%</b>	<b>1,2%</b>	<b>7,2%</b>	<b>3,9%</b>

The table displays TEA rates of several stages of entrepreneurial activity in Tunisian regions. The highest rate of nascent entrepreneurs is observed Grand Tunis and is attributable to the high level of business opportunity (80% of newly created business in Grand Tunis is mainly opportunity) and the best rate of capabilities (49%).

Clearly, APS results show that for all regions business creation is more pronounced for male than female population. Nevertheless, the gender gap varies from one region to another. The lowest gap is observed in the Center East.

## **VI.6. Entrepreneurial attitudes and abilities in Tunisian regions**

The table below provides a statistical summary of entrepreneurial characteristics such as personal attitudes, capabilities prospects for a new business venture in the near future, knowledge and abilities needed to start a business and the fear of failure as an indicator of risk attitude. According to the GEM Model, good entrepreneurial prospects do correspond to good opportunities for starting a business in the next 6 months in the region in which the entrepreneur lives. On another ground, fear of failure provides an indication of attitude toward risk, match up to the condition that would prevent the entrepreneur from starting a business. The entrepreneurship ability corresponds to the situation where the individual estimate to have or not the required knowledge/skills to start a business.

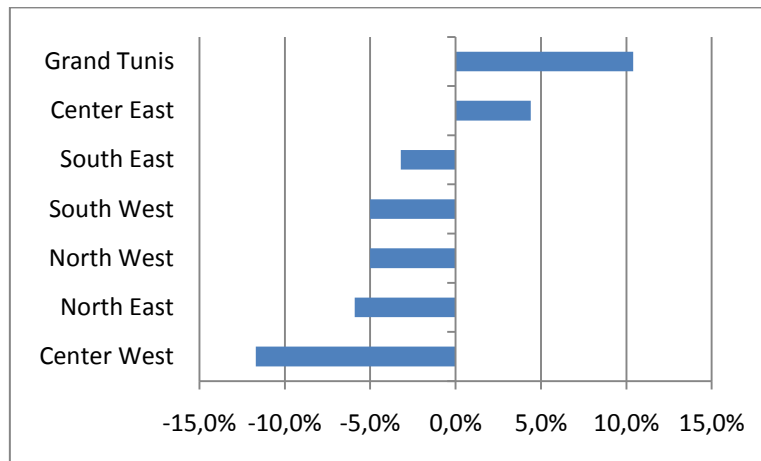
The following table show that perceived capabilities to start a firm is the highest in Grand Tunis and in particular in the governorates of Tunis and Ben Arous, where we also have the highest rate of nascent entrepreneurs. Nevertheless, and despite the high rate of knowledge and abilities in the North-East, this region does have a low rate of nascent entrepreneurs. This anomaly could be explained by looking at the risk attitude where we observe a high level of fair failure combined with a non satisfactory prospect of success.

**Table 4: Entrepreneurial attitudes and abilities in Tunisian regions**

Regions	Good entrepreneurial Prospects <sup>1</sup>	Fear of failure <sup>2</sup>	Knowledge and Abilities <sup>3</sup>
Grand Tunis	25,4%	29,9%	49,3%
North East	9,1%	31,0%	48,3%
North West	10,0%	9,5%	34,1%
Center East	19,4%	33,3%	39,1%
Center West	3,3%	11,4%	35,3%
South East	11,8%	26,1%	40,9%
South West	10,0%	18,2%	9,1%
Country	<b>15%</b>	<b>24%</b>	<b>40%</b>

In order to have an assessment of the deviation of regional entrepreneurial characteristics with respect to the country level, we use APS data to compute the percentage differences between the perceived opportunity, attitude towards risk and perceived capabilities between the regional level and the country level.

It is clear that Grand-Tunis and the Centre East have the highest perceived opportunity rates than the country level. This is not surprising given that these regions are known being very large agglomerations. In addition, these important regions seem to be potentially very entrepreneurial regions. Indeed, they have the highest perceived capabilities rate with respect to the country level.



**Figure 13: Good entrepreneurial prospects: regional level versus county level**

On another ground, results show that four regions have levels of fear of failure above the national average namely Grand Tunis, North East, South East and Centre East with the latter region having indeed the highest failure rate.



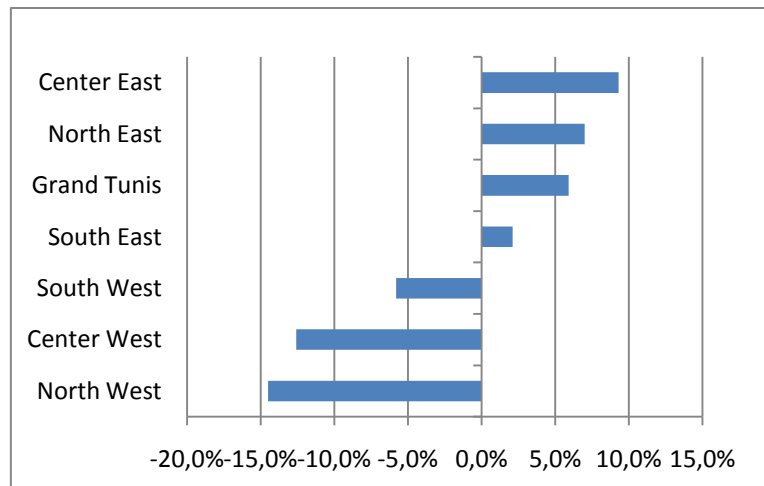


Figure 14: Fear of failure: regional level compared to national level

Concerning the entrepreneurial characteristic as far as knowledge and abilities needed to start a business, the computations show that individuals belonging to the Grand Tunis and the North East regions estimate that they have enough knowledge and abilities to run a business.

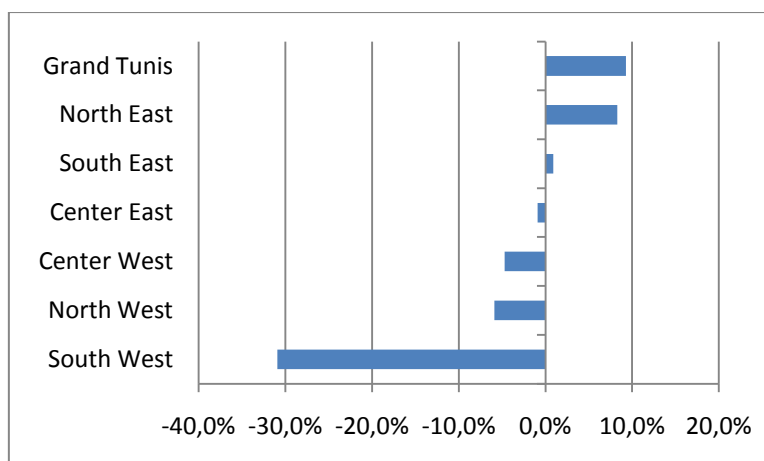


Figure 15: Knowledge and Abilities: regional level compared to national level

## VI.7. Characteristics of Early-stage entrepreneurial activity in regions

The following table show regional disparities in term of job growth aspiration. Indeed, growth orientation is highest in four regions namely the North-East, North-West, South East and Grand-Tunis.

The column technology sector provides the % in TEA of entrepreneurs active in technology sector. New product market combination includes the % in TEA of individuals who claim that their product is new and who do not expect many competitors. The column job growth oriented gives the % in TEA of individual

entrepreneur who expect at least 10 employees in the coming five years. The last column presents the % in TEA, of individuals who use new technology.

In contrast, the center with both its eastern and western wings does not show important entrepreneurial growth expectations by the respondents for the coming five years.

On another ground, the results indicates that only Grand Tunis, North-East and Center-East regions have an early-stage entrepreneurial activity active in technology-sectors with shares relatively weak but higher that the country level. Four regions displays high degree of new product market oriented early stage activity, namely South East, Center West, North West and the Grand Tunis.

However, Acs, *et al.* (2008) note that the question underlying the index for new product-market combinations should be seen in the regional context: new products and new markets are all relative to what is common practice in the region. Otherwise, what may be considered as a new product by consumers in west of Tunisia may not be considered new in the East regions.

**Table 5: Characteristics of regional early stage entrepreneurial activity (% in TEA)**

Regions	technology sector <sup>1</sup>	New product market combination <sup>2</sup>	Job growth oriented <sup>3</sup>	Use New Technology <sup>4</sup>
<b>Grand Tunis</b>	5,5%	16,4%	10,9%	12,7%
<b>North East</b>	7,4%	0,0%	18,5%	7,4%
<b>North West</b>	0,0%	20,8%	16,7%	4,2%
<b>Center East</b>	2,9%	11,4%	2,9%	5,7%
<b>Center West</b>	0,0%	20,7%	3,4%	6,9%
<b>South East</b>	0,0%	10,0%	10,0%	10,0%
<b>South West</b>	0,0%	33,3%	0,0%	0,0%
<b>Country</b>	<b>3,2%</b>	<b>14,5%</b>	<b>7%</b>	<b>8,1%</b>

## VII. Women Entrepreneurship: A regional Analysis

In general, entrepreneurial dynamics may refer either to the creation *ex-nihilo* (Independent Entrepreneurship) or to intrapreneurship (Corporate Entrepreneurship). These two broad categories of entrepreneurs start a new business based on either on opportunity or necessity motives. Nonetheless, this process of creating a new organization is not necessarily in the *same fashion* for male and female, despite the fact that research on entrepreneurship since the writings of Schumpeter implicitly deals with the entrepreneur as a generic individual without specific reference to gender.

There is no doubt about the importance of the role played by women in society. Such assertion is important for the global economy insofar the investment in women's entrepreneurship contributes extensively in the increase in the number of start-ups whether for necessity or opportunity motives.

Analysts consider that female entrepreneur is at the core of a network comprising her professional activities which includes her business, family, personal and social.

Moreover, several authors argue that the specificity of female entrepreneurship is related to the observation that women may pursue different objectives of business entry. Also, women may invest in different sector of activities and develop different products than men.

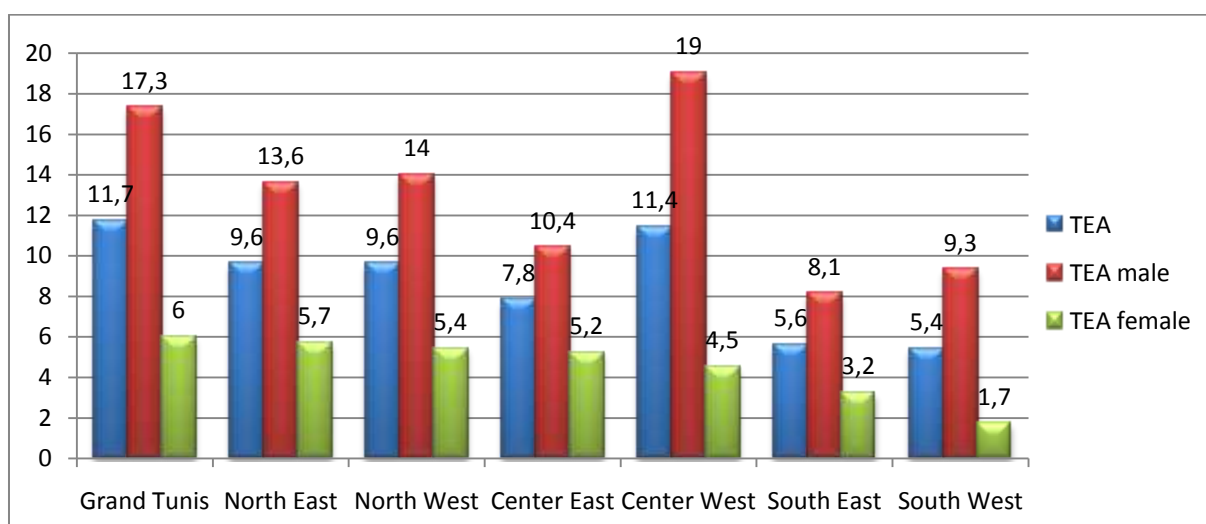


Figure 16: Regional TEA by gender

The results show that entrepreneurial activity is nearly three times higher for male compared to female. This gap is higher for the Center West and is surprisingly even more pronounced for the Grand Tunis which includes the Capital Tunis. In contrast, the lowest gender gap is observed in the South East and the Center East regions.

Most of the entrepreneurship literature suggests that the probability of undertake independent activity is higher within male population. Moreover, these studies show that men are twice more involved, in the process of starting a new business, than women.

It is clear that like almost all GEM participating economies, Tunisia is characterized by a clear *gender gap*. Tunisia makes no exception, on this ground, despite the tremendous efforts in term of women liberalization and institutional reforms to achieve more gender equity. We note that the lowest female TEA is observed in the

South of the country with both its eastern and western wings. This is very likely attributable to the strength of the attachment of individuals to local customs that may have played a crucial role in term of slowing down business creation by female entrepreneur. Indeed, family environments may not value and support enough firm creation by female individuals. We believe that the investigation into the causes of such gender gap in the entrepreneurial activity is extremely important and deserves further investigations.

Nonetheless, the analysis of the magnitude of the gender gap is as relevant as the analysis of the existence of such gap. Indeed, one could ask why the gap is very small for a group of countries (Latin American countries) and why it is large even huge for another bloc of countries. Why does such gap persist over time? Also, the question that one would ask is whether it is possible to control for this gap and thus reduce it. In addition, what would be the appropriate measures and policy instruments to implement?

Indeed, despite national efforts made to promote the status of women in the country, it seems that the profession of entrepreneur is not necessarily viewed as suitable for women. In the prevailing local thinking, the responsibility and family support always are typically a male matter.

APS results show that early-stage female entrepreneurial activity decreases from 6% to 1% from north to south of the country. The results also indicate that the highest female early stage entrepreneurial activity is observed in the Grand Tunis region. This result is undoubtedly attributable to women emancipation effect being more accentuated in the capital. Residents of Grand Tunis, which includes the capital, are considered as more liberal. Female entrepreneurship is viewed as being equal and as having the same value and probability of success as male. Females are regarded as equal rights to males and they could undertake independent economic activity by themselves without depending on male support.

**Table 6: Early-stage entrepreneurial activity in Tunisian regions by gender and motive**

Regions	Male			Female		
	TEA Male	TEA Opportunity	TEA Necessity	TEA Female	TEA Opportunity	TEA Necessity
<b>Grand Tunis</b>	17,3%	12,7%	2,5%	6,0%	3,8%	1,3%
<b>North East</b>	13,6%	11,4%	1,4%	5,7%	5,0%	0,7%
<b>North West</b>	14,0%	9,9%	3,3%	5,4%	2,3%	1,5%
<b>Center East</b>	10,4%	6,3%	3,2%	5,2%	3,9%	1,3%
<b>Center West</b>	19,0%	12,4%	4,1%	4,5%	3,0%	0,8%
<b>South East</b>	8,1%	7,0%	0,0%	3,2%	1,1%	1,1%
<b>South West</b>	9,3%	1,7%	5,6%	1,7%	3,7%	0,0%
<b>Country</b>	<b>13,7%</b>	<b>9,8%</b>	<b>2,7%</b>	<b>5,1%</b>	<b>3,4%</b>	<b>1,1%</b>

This table shows that early stage female entrepreneurship is more opportunity than necessity. This finding is true for all regions. The motive does not seem to be determined by regional characteristics, but it is more related to other variables specific to women business creation process. So it is not clear, that the prevalent idea that male is supposed to be in charge of his family is necessarily verified in this case.

Several studies indicate that women have the same willingness to create a business than men but that only a fraction of these women is ready to take the first step due to a set of constraints or even barriers. It is recognized that barriers and difficulties to business creation, being true for all countries, would probably play a more stringent role for women.

Women entrepreneurs may also face *specific barriers*, different from those encountered by men. Four major categories of constraints to business creation by women are often cited by the literature:

- i) Barriers related to the environment: family, level of support for relatives, and other social.
- ii) Barriers related directly to the person, feelings of inefficacy or incompetence, time unavailability, more risk aversion, health status etc..
- iii) Obstacles specific to the process of creation itself: legal and administrative aspects, infrastructure, access to resources, etc.
- iv) Barriers related to the perception of economic environment: economic conditions, market conditions, labor market conditions, etc.

On another ground, we note that, for almost all regions, the rate of early stage male opportunity entrepreneurial activity is clearly much higher than the necessity one, except for the South West. This confirms the idea mentioned earlier in this paper that, for all gender, entrepreneurship activity in Tunisia is more opportunity than necessity.

The Center West has the highest male TEA (19%). We note that this particular region is mainly characterized by a low population density, an important agricultural activity and a significant net migration.

We also note that the highest TEA necessity for male is observed in the South-West and Midwest. This could be attributed to culture and social norms such as considering giving male the exclusive responsibility of taking care of his household.

In the following, we look into the details of this gender differential when we take into account the urban-rural dimension.

**Table 7: Rate of early-stage female entrepreneurial activity in Tunisian regions by area and by motive**

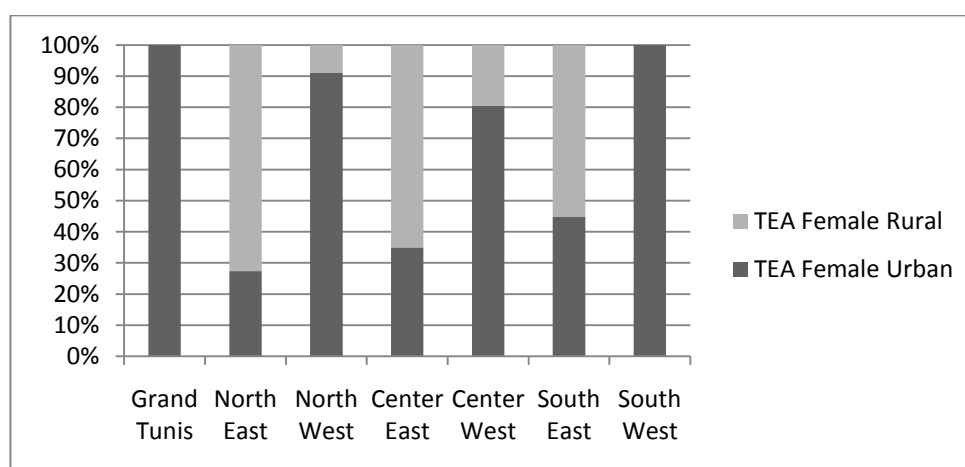
Regions	TEA Female		TEA Opportunity Female		TEA Necessity Female		Nascent entrepreneurs Female	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
<b>Grand Tunis</b>	6,5%	0,0%	4,1%	0,0%	1,4%	0,0%	2,8%	0,0%
<b>North East</b>	3,5%	9,3%	3,5%	7,4%	3,5%	1,9%	0,0%	0,0%
<b>North West</b>	12,2%	1,2%	4,1%	1,2%	4,1%	0,0%	2,0%	0,0%
<b>Center East</b>	4,2%	7,8%	3,0%	6,3%	1,2%	1,6%	0,6%	3,1%
<b>Center West</b>	9,1%	2,2%	4,5%	2,2%	2,3%	0,0%	4,5%	0,0%
<b>South East</b>	3,0%	3,7%	1,5%	0,0%	0,0%	3,7%	0,0%	0,0%
<b>South West</b>	2,5%	0,0%	2,5%	0,0%	0,0%	0,0%	0,0%	0,0%

The above table shows that the North West has the highest female urban TEA, while the South West possesses the lowest urban female TEA. The North East region is characterized by the highest female rural TEA, while Grand Tunis and surprisingly the South West region have a negligible female rural activity.

Female entrepreneurial activity is divided between urban and rural areas. Clearly, we can not tell that in general female entrepreneurial activity is either an urban or a rural phenomenon.

Nonetheless, results show that for almost all regions opportunity female entrepreneurship is by large an urban phenomenon except for the North East and the Center East regions.

Also, our results show that female necessity entrepreneurship activity for all Tunisian regions except for the south region, both East and West, are rather urban characteristic. So that female entrepreneurial involvement is essentially located in urban areas whatever the motive.



**Figure 17 : Female Early-Stage Entrepreneurial Activity by area**

Furthermore, the literature attempts to explain the gender gap in TEA or the rate of business creation by the hypothesis that business creation by male has a limited impact or even insignificant on that by female. Thus, most analysis tends to confirm that men and women are not equal in term of business creation and hence tends to confirm the existence of a specific gender gap effect slowing down women entrepreneurship.

**Table 8: Early-stage female entrepreneurial activity in Tunisian regions by entrepreneurial Characteristics (% in TEA)**

Region	Technology sector	New product market combination	Good entrepreneurial prospects	Knowledge and Abilities	Fear of failure
Grand Tunis	7,1%	21,4%	15,0%	39,1%	37,0%
North East	0,0%	0,0%	13,3%	35,0%	25,0%
North West	0,0%	42,9%	8,8%	30,3%	8,8%
Center East	8,3%	16,7%	13,0%	41,4%	41,9%
Center West	0,0%	50,0%	5,3%	27,3%	13,6%
South East	0,0%	0,0%	7,1%	33,3%	31,6%
South West	0,0%	0,0%	12,5%	11,1%	11,1%

On another ground, the results indicate that the coastal regions Grand Tunis and Center-East have an early-stage entrepreneurial active involvement in technology-sector. The two regions have also high level of knowledge and abilities combined with high levels of fear of failure.

In term of new product market combination, the results confirm the argument of Acs *et al.* (2008) that the question underlying the index for new product-market combinations should be seen in the regional context: new products and new markets are all relative to what is common practice in the region.

**Table 9: Regional Distribution of female entrepreneur by level of education**

Regions	NONE	SOME SECONDARY	SECONDARY DEGREE	POST SECONDARY	GRAD EXP
Grand Tunis	22,0%	9,8%	34,1%	12,2%	22,0%
North East	21,1%	5,3%	26,3%	15,8%	31,6%
North West	11,8%	17,6%	47,1%	5,9%	17,6%
Center East	30,4%	17,4%	30,4%	4,3%	17,4%
Center West	21,7%	34,8%	34,8%	4,3%	4,3%
South East	28,6%	14,3%	28,6%	28,6%	0,0%
South West	40,0%	0,0%	40,0%	0,0%	20,0%

Following the general population tendency, female entrepreneurs possess mainly primary and secondary education with non negligible university training. Grand Tunis

and North East has the highest proportion of female entrepreneurs having the highest university education level.

Moreover, several authors argue that the specificity of female entrepreneurship is related to the observation that women may pursue different objectives of business entry. Also, women may invest in different sector of activities and develop different products than men.

**Table 10: Regional Distribution of female entrepreneur by activity sector**

Region	EXTRACTIVE	TRANSFORMING	BUSINESS SERV	CONSUMER ORIENTED
<b>Grand Tunis</b>	19,5%	26,8%	7,3%	46,3%
<b>North East</b>	10,5%	31,6%	15,8%	42,1%
<b>North West</b>	47,1%	29,4%	0,0%	23,5%
<b>Center East</b>	8,7%	30,4%	8,7%	52,2%
<b>Center West</b>	39,1%	17,4%	8,7%	34,8%
<b>South East</b>	14,3%	42,9%	28,6%	14,3%
<b>South West</b>	40,0%	20,0%	0,0%	40,0%

By dividing the country in coastal regions and interior regions, we note that female entrepreneurial activity in the west is mainly specialized in extractive and transforming sectors and specifically agriculture. While female entrepreneurs located in the eastern region of the country are tend to undertake consumer and business oriented economic services.

## VIII. Conclusion

This empirical research investigates the determinants of inter-regional differences in new firm formation and business creation based on GEM APS data for Tunisia.

Our results show that highest necessity TEA is observed in regions characterized by the scarcity of large industrial groups with all the consequences in terms of jobs and income stabilization.

Surprisingly, the Center East has shown the lowest total entrepreneurial involvement despite its predominant touristic position. Indeed; tourism is very labor intensive which naturally reduces unemployment flows. Nonetheless, employment in this sector is characterized by seasonal and cyclical factors. Future studies should take into account the time span of the year when the survey is conducted in order to control for seasonal factors.

The results show that established entrepreneurship is not the matter of young adults but rather it is the domain of more advanced age individuals. Early stage



entrepreneurial activity is more an early age occupation and this is attributable to the need for a minimal level of maturity by the entrepreneur in order to insure sustainability of business activity.

We also show that for all regions, necessity early stage entrepreneurial activity is a rural characteristic while opportunity entrepreneurship is basically an urban phenomenon. Therefore, regional characteristics do not make any difference in this matter.

Grand-Tunis and the Centre East, being costal regions, have the highest perceived opportunity rates with respect to national level. This is true because these regions are mainly very large agglomerations. In addition, these important regions seem to be potentially very entrepreneurial regions. Indeed, they have the highest perceived capabilities rate with respect to the country level.

The results indicate that the coastal regions Grand Tunis and Center-East have a high early-stage entrepreneurial active involvement in technology-sector. This finding is correlated with the result that these two regions have also high level of knowledge and abilities combined with high levels of fear of failure.

APS results show that, for all regions, business creation is more pronounced for male than female population. Nevertheless, the gender gap varies from one region to another. The lowest gap is observed in the Center East.

Female entrepreneurial activity is scattered between urban and rural areas. Clearly, we can not tell with precision, whether female entrepreneurial activity is either an urban or a rural phenomenon.

Entrepreneurial activity is nearly three times higher for male compared to female. This gap is higher for the Center West and surprisingly is even more pronounced for the Grand Tunis, which includes the Capital Tunis. Paradoxically, Grand Tunis has the highest female early stage entrepreneurial activity. The lowest gender gap is observed in the South East and the Center East regions.

The analysis of the several dimensions of regional entrepreneurial activity does indicate that start-ups creation does vary from one region to another.

We believe that the contribution of entrepreneurship to economic growth may vary from region depending on various factors in particular the quality of entrepreneurship available in that region. The aspirations of entrepreneurs, the preference for innovation, the international orientation and the ambition for growth may make the difference in term of regional development. As far as policy makers and stakeholders are concerned, there is a need to consider and lay down the grounds for the emergence of high-tech regions in Tunisia based on the regional characteristics of entrepreneurial activity as shown from the APS survey.

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