

## The Dynamism of Small and Medium-Sized Enterprise (SME) Growth: A Literature Review Centered on Resource Theory

Denis LUHIRIRI

Université Catholique de Bukavu (UCB)  
Email: denisluhiriri@gmail.com

Muko MUBAGWA

Université Catholique de Bukavu (UCB) & Institut Supérieur de Développement Rural (ISDR)  
Email : mukomuba@gmail.com

### Abstract:

*In his paper, the authors review the dominant thoughts developed in the resource theory of growth of Small & Medium Enterprises (SMEs) mainly of the developed world. In this theory growth, is the result of certain key variables concurring to the accumulation of key resources. Other types of growth theory are also cited for example, the theory that see growth as the consequence of company better process organization. He theory of resource as reviewed here, does not delve into the specificity of SMEs poor countries in which many SMEs are very tiny enterprises operating in informality, mostly operated by one person aided by non-contracted employee and which the logic is household survival and not the logic of making profit, increasing sales, employment and company value assets.*

**Key words:** resource theory, dynamism of SMEs, measures of dynamism and growth.

### INTRODUCTION

The importance<sup>1</sup> of the growth dynamics (in size or in quality) of a company (which is a constitution of resources) has been noted in various studies (Ahlstrom, 2010; Dobbs & Hamilton, 2007; Gilbert & al., 2006; Khan, 2011; McPherson, 1996; Vaz, 2021). Subsequently, the resource theory, in particular the possession of unique resources (abilities that are difficult to exchange and imitate, rare, appropriable and specialized which give a company a competitive advantage) (Barney, 2001, 1986, 1991; Deng, 2009; Penrose, 1959; Young & al., 2014; Wernerfelt, 1984) served as a reference to explain the growth of a firm<sup>2</sup>. In this, the dynamic comes immediately after a strategic choice. The strategic choice is in itself a function of a set of factors such as innovations, objectives, visions, missions, strategies, age, human and financial resources, etc. (Uy & al., 2016). It focuses on the acquisition of additional resources through organic (internal growth), acquisitive (external growth) (Delmar, 1996 & 1997; Penrose, 1959) or mixed (hybrid growth) channels. (Davidsson & al., 2010; McKelvie & Wiklund, 2010; Vaz, 2021)<sup>3</sup>.

Despite its recognized importance, the concept has struggled to emerge (Achtenhagen et al., 2010; Davidsson & al., 2010; McKelvie & Wiklund, 2010). Studies that have attempted a conceptualization (Baumol, 1962; Birch & Medoff's, 1994; Davidsson & al., 2010; Delmar et al., 2003; Demir et al., 2017; Julian, 2002; Kozan et al., 2012; Lebrasseur & al., 2003; Lucas, 1978; Mahamat, & al., 2020; Ngek & Vanzy, 2014; Penrose, 1959; Rubin, 1973) were more limited to giving measures of the dynamics of growth. These studies agree with the findings that intention and actual growth are more related; but remain divided on the measures of growth. Let us

note in passing that on the basis of these measurements, several typologies of SMEs have emerged: "SMEs in hyper-growth, the gazelles, in continuous growth, in resumption of growth, in depression, etc. (Bibu & Sala, 2014; Birch & Medoff's, 1994; Julien, 2000 & 2001; Kozan & al., 2012). In this sequence, the dynamism of growth can be conceived as the probability for an SME to change its growth phase.

We postulate based on the resource-based view<sup>4</sup> (Barney & al., 2001; Barney, 1991; Penrose, 1959; Porter, 1980; Wernerfelt, 1984) and on the theory of planned behavior (Ajzen, 1988, 1991, 2020; Fishbein & Ajzen, 1980; Locke, 1991; Oiseau, 1988 & 1992) (according to which the intention precedes the act, therefore predicts it better.) that dynamics is the difference between real growth and that which the entrepreneur hopes to obtain in the future; since the resulting gap leads to variations in resources. Such a conceptualization has several advantages. First, it makes it possible to overcome the concerns which did not allow the concept of growth to emerge<sup>4</sup>. Second, it makes it possible to introduce non-usual factors explaining the differences in the dynamics of the growth of the firm such as feelings and personality traits.

Also, the theory of growth developed so far offers solid arguments allowing us to relate the dynamism of growth, growth and the dynamics of growth. The work of Davidsson (1989); Davidsson & al. (2010); Delmar (1996 & 1997); Gilbert & al. (2006); McKelvie & Wiklund (2010); Gupta (2013) contains empirical and theoretical evidence of significant advances on how growth is formed, its dimensions and forms, its stages (life cycle, trajectory), its links with entrepreneurship, current research on growth (results, consequences and processes). This work also highlights the problems which did not allow the

growth concept to emerge, among others: *heterogeneities over time, growth measurements, separability of indicators, subjectivity/objectivity, absolute variable (large companies)/relative (small businesses) /logarithm(skewness)*.

The dynamism differs from them in the calculation, the meaning of certain figures, in the monotonous transformation (deflation, standardization...) and emerges as a broad whole which contains growth and its dynamics. It is also more important than simple growth since its rate can help understand the current level of an economy and predict its future development. For example, by detecting an opportunity, entrepreneurs will want to seize it by hiring more staff (of quality), to whom they will provide resources; and gain a lasting benefit. To maintain this advantage, they will have to innovate by reviewing their production processes, by perfecting them; planning for future acquisition of unique resources. Customers will be satisfied and more engaged in SMEs which will benefit from very high sales levels and provide entrepreneurs with very high profits (Zander & Zander, 2005). This situation can increase the call for additional funds by facilitating access to external or internal financing since SMEs will be perceived as viable in the eyes of donors and shareholders. In this context, the current configuration of SMEs, see, of the economy changes quantitatively and qualitatively continuously; and all economic players will be satisfied. It is therefore noticeable that the political decision-makers who tabulate on the dynamism of the growth of SMEs have won everything; since they are guaranteed current and future earnings, and even re-election. Such implications are discussed in the studies of Ahlstrom, 2010; Davidson et al. (2010); Delmar (1997); Delmar, & Wiklund, 2008; Gupta, 2013; Janssen, 2011; Kozan, 2012; Penrose (1959); McKelvie & Wiklund, 2010; Ortiz-de-Urbina-Criado & al., 2014; Storey (1995); Vaz, 2021; Wright & Stigliani, 2012; Zampetakis & al., 2016).

The dynamism of growth is therefore the essence of entrepreneurship. From now on, it is associated with the behavior of entrepreneurs who can choose to pursue one mode of growth dynamism while excluding another (the dynamism of growth by acquisition of internal resources to the detriment of that of acquisition of external resources), or to pursue both at the same time (hybrid expansion). By the fact that the differences can be explained by entrepreneurial variables such as the choice of resources (human, financial and physical capital), structure, strategy, etc.

In summary, this work aims to contribute to the literature on firm growth. As a result, it is limited to the theoretical level by trying to explain how the dynamism of an SME can be formed. This work is innovative in that it offers the entrepreneurial literature, policy makers and practitioners an additional policy element. In the remainder of this work, the following points will be discussed in

addition to the introduction and conclusion: approaches, measures of business growth and, measures of growth dynamism, implications of growth dynamism.

## **APPROACH, MEASUREMENTS OF BUSINESS GROWTH**

### **Business growth in resource theory**

To a large extent, resource theory is a reaction to the analyzes of the 1980s, where strategic management research focused on market positioning ( Shepherd & Wiklund, 2005 ) in which distinctive skills provide sustainable competitive advantage ( The concept of sustainable competitive advantage does not refer to the calendar period of time during which a company enjoys a competitive advantage; but to the inability of current and potential competitors to reproduce this strategy which makes a competitive advantage sustainable or its continues to exist after efforts to replicate this benefit cease. ) which impacts the efficiency and effectiveness of the business. In his article in the special issue, Barney (1991) argued that sustainable competitive advantage stems from a firm's resources and ability to control it. These resources must be precious, rare, imperfectly imitable and non-substitutable; may come from an imperfect market, must be inelastic with respect to supply and the act that contributes to their acquisition may have consequences on the size or on the production process (Barney & al., 2001; Penrose, 1959) which represent the previously accepted definitions of growth (Penrose, 1959).

The growth in question is based on the acquisition of additional resources that can allow the firm to have a sustainable competitive advantage which comes from the emergence of internal pathways (strengths and weaknesses, strategies for creating non-copiable value ) . , management and diversification of internally held resources) as supported by the structure-behavior-performance (SCP) and Penrosian paradigms (Barney, 1991 & 1999; Caves & Porter, 1977; Lee and Barney, 2016 ; Penrose, 1959; Porter, 1985; Wernerfelt , 1984). In the Penrosian paradigm, the expansion of resources synonymous with quantitative growth (Davidsson & al., 2010; McKelvie & Wiklund, 2010; Penrose, 1959: 189) or qualitative improvement (similar to biological processes) is based on a neoclassical ideology of balance of the firm which is always recalled or maintained by the forces of gravity.

The central argument is that the SME cannot grow indefinitely because the resources which generate this growth are homogeneous, rare, elastic and mobile (no barriers); that growth is reduced to the limits of management (increase in input costs), the market (decrease in income) or uncertainty about future prospects (cost of inputs and decrease in

income). An SME which first identifies an opportunity, designs and implements a strategy, based on a unique resource (information on an opportunity) to exploit it, will benefit from both internal growth (acquisition of organic resources) and external (expanding its market share) for a certain period of time. As time evolves, this growth will be reduced as other competitors or potential entrants will become aware of the same opportunities and exploit these opportunities in the same way (Barney, 1991).

Likewise, to exploit this opportunity, the SME will request more resources, but in the event of an increase in demand for a particular resource or capacity, the acquisition price of this resource will also increase; and the total quantity of this resource made available to the market will increase (Barney, 2001). Entrepreneurs simultaneously detect an opportunity, simultaneously anticipate a future advantage, combine resources in the same way and the dynamic is short-lived because of the pressure that the entrepreneurs will exert on the resources (raw materials). This pressure can be due either to the increase in capital (human, physical, financial) or labor (in additional hours and workers). The only possible path to continued growth involves the acquisition of other firms.

Barney et al. (2001) reacts to this vision of Penrose (1959) of growth limited in the long term by the management of internal resources. They rely on certain attributes of resources (inelastic, rare, inimitability, etc.) and maintain that the limit of growth is no longer possible and that therefore the firm can grow in the short term and in the long term<sup>6</sup>. Mahoney & Rajendran (1992) find similar results in their version of growth which may be of Richardian, monopolistic, entrepreneurial or Schumpeterian origin. Zander & Zander (2005) argue that growth and diversification can be driven by the market (supply or demand) based on the case study of Penrose Hercules Powder Company (which curiously recognizes pathways of steps<sup>7</sup>). They find that the company's established customers were instrumental in generating ideas for entering new product areas, and that meeting their diverse needs resulted in the assimilation and formation of skills and competencies. previously unexploited resources.

Wernerfelt (1984) argues that the pioneering firm which benefits from a unique resource (resource position barrier) will create a situation where its own resource position directly or indirectly makes it more difficult for others to catch up by influencing costs. acquisition or user income by improving the capacity of the machine to produce, or by retaining production experience, by technological advances, by merger and acquisition of firms. Holding this resource negatively affects the costs and/or income of subsequent acquirers. When a firm of an entrepreneur innovates, it enjoys a certain dominant position on this innovation which crowns

it with success, granting it temporary market power by reducing the profits and the power of competing companies, and in the long term can make them disappear. By being aware, the SME will seek to consolidate its growth by improving the innovation process by abandoning old resources and seeking those that are desired in the present markets.

The continuous improvement of the process of creative destruction of a new innovative combination of resources (Mankiw, 2019: 263-264,) also allows the firm to maintain its permanent advantage. Mankiw (2019:264) gives a more recent example of creative destruction, illustrated by mass distribution in the United States: "*the case of the distribution giant Walmart. (...) Walmart gradually dominated the retail industry by using new inventory management, marketing and human resources management techniques, forcing many older or smaller companies to disappear.*". Studies on the success story of the creator of Microsoft continue to promote domination without taking any limits (McKelvie & al., 2011).

Later following the emergence of critiques and its branching off with other disciplines (entrepreneurship, evolutionary or transaction cost economics, etc.), studies recognize that external pathways are also sources of sustainable benefits. At this Zander & Zander (2005) support and empirically prove the role of the customer. Barney (1991) instead posits the positive reputation of firms with customers and suppliers as a scarce and imperfectly imitable resource (usually from specific historical contexts and difficult to duplicate; viewed as informal social relationships between firms and key stakeholders).

### **SME growth as resource expansion**

The resource theory shows how much and how to grow unlike McKelvie & Wiklund (2010), who argue that a single theory cannot explain the differences in growth and therefore the studies which are based on the resource theory and the Cost savings are limited. They identify three streams of research that have emerged in growth studies. The first treats growth as the result of variables whose differences are explained by the independent variables. The second deals with how growth (or increase in size) leads to organizational consequences, such as the need for change or certain decision-making or skills (as a variable that influences other variables). The third focuses on the process of growth similar to biological growth in the theory of evolution which is a goal in itself.

We argue that growth comes from an accumulation of additional resources (Mubagwa, 1999). From this angle, the growth of resources coincides with the growth of the company defined by Penrose (1959) as an administrative organization and as a pool of productive resources (Penrose, 1959). Rubin (1973) and later Miller & Friesen (1978), consider

the business as a set of particular activities or resources, that is, resources that are worth more to the business than their market value in due to specialized experience within the company. The resource is also at the center of the growth of a company in the sense that in their processes, companies use resources (Eisenhardt & Martin, 2000). These processes may constitute integration, reconfiguration or acquisition of resources.

The idea is that acquiring the resources essential to creating sustainable competitive advantage involves growth in size and process innovation. This dynamic occurs over the time that is necessary for the acquisition of resources as supported by resource theory (Eisenhardt & Martin, 2000). In this case, the growth of the SME occurs during or after a certain period. Studies by Davidson, McKelvie & Wiklund (2010); Delmar (1997) show that firm growth was mainly measured as the difference between two points in time, i.e., 3, 4, 5 and 6 years<sup>8</sup>. This duration is important in the development of new innovations and the attributes required to transform these innovations into a sustainable competitive advantage in the market. It coincides with the Smithian vision whose innovation comes from specialization in a task. The process of creative destruction takes place over a period of time. Over time entrepreneurs can learn from their mistakes (the most efficient and effective routines are acquired; the less effective and efficient ones are either abandoned or modified). This repeated entrepreneurial behavior leads to the identification and exploitation of "better" opportunities, and therefore to the modification of SMEs.

Time proved to be an issue that prevented the emergence of growth theory since cross-sectional studies struggled to capture growth dynamics. Those who integrated time were involved in the prediction of the past, thus involving selection (success) and hindsight (retrospection) biases (Davidsson & al., 2010; McKelvie & Wiklund, 2010). To circumvent this difficulty, the work was based on the theory of planned behavior developed by Icek Ajzen (Ajzen, 1988 & 1991) and validated by Locke (1991). This theory states that actions can be predicted by intentions<sup>9</sup>. To this end, studies have used future-oriented growth intention rather than actual growth as the dependent variable (e.g., Davidsson, 1989 & 1991; Lebrasseur & al., 2003; Shepherd & Wiklund, 2005) or to explain its impact on performance (Orser et al., 1998) or on entrepreneurial decisions (Mitchell & al., 2000). Shepherd & Wiklund (2005) provide some reasons for using intention; Davidsson & al. (2010), McKelvie & Wiklund (2010) put forward some criticisms that question the use of intentions.

We are of the opinion that being based on data (real or not) or on intention is limiting. The objectives can change over time as a result of several factors (institutional variation, change of team or work, external funding)<sup>10</sup>. Past growth may or may not come true or does not mean intention. For example,

McKelvie & Wiklund (2010), point out that as companies develop and grow, they can simply change their activities, the markets they serve, the products they offer and everything they do. may do may vary. Kozan & al. (2012) argue that the owner of the SME can choose whether or not to continue expanding, subject to gains exceeding the expected costs (monetary or intangible), or that the future growth intentions that come as a result of a Past strong growth may be the result of different cognitive and emotional processes than growth intentions that attempt to compensate for recent poor growth.

To this problem of time, we associate the problems of the measures of growth of the company. This problem relies primarily on measures of absolute or relative changes, or on the transformation of these measures (a logarithm transformation is often used to account for asymmetry in the sample). Relative measures (in percentage) tend to "favor" the growth of small businesses and are suitable when the sample is composed of large companies, while the reverse is true for absolute growth measures which are suitable for a sample small business (Davidsson & al., 2010; Delmar, 1997). In a mixed sample, the combination of different measures following the example of Delmar (1997) and the use of several indicators (Davidsson & al., 2010) makes it possible to clarify the results. Another possibility to avoid such problems is to work with samples and subsamples where the size is either randomized or preferably controlled (Davidsson & al., 2010).

The second problem revolves around questioning the nature of the objective or subjective variable. Delmar (1997) the first rejects the use of subjective measures (i.e., the respondent is asked to evaluate the performance of the company in relation to the industry, the closest competitors or its objectives). He argues that measures such as perceived market share, performance index and performance satisfaction are not appropriate measures because they are based on entrepreneurs' knowledge and expectations. He argues that using objective measures such as sales, employment or assets better capture business growth for multiple reasons; among others their available, are considered (whether from a research point of view or from the respondent's point of view) as non-controversial or as important indicators of the conduct of economic dynamics (in job creation). *According to him "different people may differ in their satisfaction with the same level of growth or performance. For example, an entrepreneur may be very satisfied with a growth of 25%, for example in market share, because he only expected a growth of 10%. On the other hand, another entrepreneur may be dissatisfied with a 25% growth in market share, because he expected 100% growth. Finally, subjective relative measures depend on the entrepreneurs' knowledge and perception of the situation. Without having the ability to control for these factors, it's difficult to say anything about a company's actual growth performance. »*

A point of view on which the literature of growth encounters compromises is to consider growth as a complex phenomenon (nonlinear), measurable indirectly on the basis of several indicators (constructed latent and multidimensional). Even at this level the question of indicators arises. Growth indicators maintained as valid and reliable are not spared criticism, such as the variation in value of growth in sales, employment, assets, market share (Adomako and Mole, 2018; Delmar, 1997, Gilbert & al., 2006; Vaz, 2021). The reasons (creating other resources) for the enthusiasm for using these indicators in research are multiple. Delmar (1997) identifies several reasons (monetary illusion/inflation, sectoral dependence, depends on economic and structural problems) why these indicators should not be used alone. Davidsson & al. (2010) puts forward four growth indicators. Growth can take the form of entering a new, non-overlapping product market that is tied to the firm's technology or marketing skill base (related diversification). Growth can also take the form of integrating part of the value chain that was previously outsourced (growth through vertical integration). Another form of growth is the firm's entry into a product market that is unrelated to the firm's current technology or marketing skill base (unrelated diversification). Finally, growth can occur by focusing on exploiting the existing product-market mix, i.e., through market penetration, thereby remaining a single-product (line) business (Levie, 1997). Davidsson & al. (2010); Gilbert & al. (2006); McKelvie & Wiklund (2010) collate empirical evidence based on different studies (Barringer & Greening, 1998; Blundel, 2002; Donckels & Lambrecht, 1995; Hansen, 1995; Jarillo, 1989; Watson, 2007), which seem to indicate that networks, alliances and geographic location are relevant for growth and can take different forms. We find *franchising*<sup>11</sup>, *licensing*<sup>12</sup>, *strategic alliances* and *joint ventures*<sup>13</sup>. These resources can be news technologies, specific skills, risk sharing with the new partner. Networks and alliances can be seen as an alternative to the narrow conception of growth as a pure and simple expansion of the volume of existing activities (Davidsson & al., 2010). Also, internationalization constitutes part of the process of growth and development of a company, because it involves the establishment of supply and market-related activities beyond national borders (Gilbert et al., 2006). For Davidsson & al. (2010), embarking on international operations encompasses the primary meaning of growth according to Penrose and is synonymous with the growth of economic activities beyond a country's borders. We also argue that SMEs that focus on customers exploit an external mode that must be integrated into measures of growth. SMEs that aim for customer satisfaction are led to review all their operating visions and even their destructive

creation process. The client logic of the market can cause the entrepreneur to increase employment numbers. Other forms of growth must take into account sectoral characteristics, measures the number of seats for restaurants or theaters, and the number of vehicles for taxi or car rental companies (Davidsson & al., 2010). Acquiring these resources fundamentally changes the size and quality of the organization. Gilbert et al. (2006) show that the process of expansion creates new management services that require improving managerial skills and effectiveness, and continues with the desire to acquire knowledge. Shepherd & Wiklund (2010) argue that a small business entering a new market can detect new technology that it can use to create new products that better meet customer demand than existing products; or without developing new products, it can offer existing products to new markets, whether international markets or different segments of its domestic market (This will likely increase the small business's sales). This effect should be greater if several indicators are used together. Such an indicator could have a significant effect on growth. Delmar (1997) argues that growth in general terms is interesting, therefore the use of several indicators represents the theoretical concept of growth. Also, he maintains that in research the indicators must be used separately and that several transformations must be made to better interpret the results. We believe that such an approach (separation of indicators) would result in less reliable and less valid measurements. This would explain the results he found weakly correlated indicators. interlinked indicators, and growth patterns should drive policies. Previous studies (Davidsson & al., 2010; Gilbert & al., 2006; McKelvie & Wiklund et al., 2011; Penrose 1959:189) reveal three dimensions of business growth.

**Organic or internal growth** in the company is synonymous with the construction of new facilities and the creation of new market shares of the firm. Gilbert & al. (2006) based on studies by Siegel et al., 1993; Stuart (2000); Zahra & Bogner (1999), emphasize the importance of technological strategies in the internal growth of new companies or in those already established. According to them, **internal organic growth comes** from innovative internal mechanisms. They add that the radical nature of new products, the frequency of product upgrades, the use of external technology sources, patents and copyrights, the use of advanced technologies or technologically advanced partners contribute greatly to the growth of new businesses.

**External firm growth** traditionally refers to the acquisition and purchase of an existing firm (purchasing new plants and merging is a method of combining existing businesses). Firms that grow by acquiring others enjoy several advantages reported

by Gilbert et al. (2006) (improve their product or service offerings, access new markets, benefit from the reputation that this company has established in the market and, naturally, increase its market share after the purchase. The distinction and separation of these two modes is difficult to establish. Davidsson & al. (2010); McKelvie & Wiklund (2010), report that organic growth can be done on the basis of the acquisition of other companies since several companies program their mode of internal to external growth.

Empirically it is demonstrated that organic growth is the prerogative of small and young companies and that large companies focus on the acquisition of other firms (Davidsson & al., 2010). McCann (1991:191) argues that the predominance of internal venturing among young and relatively inexperienced firms is not surprising, because such firms hardly have the resources to expand aggressively through acquisitions. McKelvie et al. (2006) conclude that there is systematic variation in the mode of growth sought (i.e., older, larger firms pursue acquisitive growth, while younger, smaller firms grow by organic way). Gilbert et al. (2006) identifies two studies that focus on the impact of acquisition on growth.

McKelvie & Wiklund (2010) add a mode *of growth hybrid* who is not neither organic neither acquisitive but se located some gobetween the two or combine elements of each. This mode is discussed by Lamont & Anderson (1985) when they talk about the strategies of internal diversification (development of products and services or of a firm which operates in several markets 60% of sales come from it) and external (acquisition of another firm). it is also reported in the studies of Adomako & Mole (2018) as networks and alliances. Hybrid forms imply organizational forms contractual obligations which, for example, can enable companies to overcome problems linked to limited managerial capacity (Shane, 1996). Hybrid modes consist of contractual relationships that bind the actors external to the company while allowing it to maintain a certain degree ownership and control over the use of its assets. This type of mode can take several forms, including franchising, licensing and the joint ventures/alliances strategic.

Lamont & Anderson (1985) find the results according to which respectively 45%, 36%, 19% of companies resort to internal, mixed, acquisitive strategic diversifications; and that the performance of blended divers do not differ statistically from other divers (internal and acquisitive) on any performance measure. Varadarajan & Ramanujam (1987) find that performance differs according to the level of diversification (high and low) of the firm. Lieberman & Montgomery (1986); Montgomery (1985); Singh & Montgomery (1987) find contrary results showing that high diversification does not provide high market power and does not influence performance. Ortiz-de-Urbina-Criado et al. (2014)

find results that show that the firm prefers to grow internally when its growth strategy is specialization, but prefers external growth methods such as mergers, acquisitions and alliances when its growth strategy is diversification and that she has previous experience in these methods.

We cannot pass without pointing out that these modes can be understood as explanatory factors of growth and not its dimensions. Furthermore, the acquisition of resources in question is different from that developed in this study. Unlike Penrosian acquisition which directly concerns size, the acquisition in question in this study is the obtaining of an additional resource which indirectly increases size. Such a conception of growth is supported by Wernerfelt (1984), when he argues that resources must be evaluated according to their short-term equilibrium effects and also according to their long-term capacity to serve as a springboard towards further expansion. Rubin (1973) argues that at any given time a firm has a set of resources and carries out a group of activities, over time both of these changes. In the case of diversification, new activities require new resources that the firm does not hold and their possession increases the size of the company.

Acquisition can facilitate financial resources. This obtaining can be done in different ways either by purchase, or by commitment, or by production (Barney, 1986; Baumol, 1962; Rufin, 1973; Wernerfelt, 1984). Wernerfelt (1984) conceives acquisition as the purchase of a set of resources in a market (imperfect or perfect). Eisenhardt & Martin (2000) focus on capacity dynamics as resource production, giving the example of Toyota which used its superior product development skills to gain competitive advantage in the automotive industry. The capability dynamic relies on previous organizational and strategic routines that can enable the entrepreneur to acquire, discard, integrate, and recombine resources that generate new value-creation strategies through which businesses realize new resource configurations. It can also be called "combinatorial capabilities" or organizational processes by which firms synthesize and acquire knowledge resources, and generate new applications from these resources (Kogut & Zander, 1992).

For Rufin (1973), the production of resources comes from an internal programming in the show which must transform raw resources into useful ones. That is, existing resources must be used to reproduce, (1) either through the use of an existing machine to create additional units of that machine; (2) either by training existing managers in new skills; (3) either by supervising routine changes made necessary by the introduction of new elements (e.g., machinery) in the production process; and (4) either by using existing frames to form new frames. Barney (2001) based on the studies of Nelson & Winter (1982) demonstrates that organizational routines constitute a resource. Hiring goes through the process of recruitment,

personnel management and the mechanism developed by agency theory can help to obtain resources. Obtaining or even its intention indirectly modifies the size of the firm, as well as its quality by requiring internal preparation.

### **Firm Growth and Entrepreneurship**

The acquisition of resources is closely linked to entrepreneurship, and even as some theorists assert, that it is a necessary condition for achieving growth (Davidson & al., 2010; Gilbert & al., 2005; Shepherd & Wiklund, 2005; Storey, 1999) (e.g. some conceptualizations recognize growth as examples of entrepreneurship if growth is based on launching new products or services or entering new markets; others associate also entrepreneurship to "simple" volume growth, in the sense that growth is used as an outcome variable interpreted as evidence of successful entrepreneurial action at the previous stage, which would allow that growth to occur. This is often an implicit link established in empirical studies.

We can also argue that the fact for an entrepreneur to acquire the resources which will facilitate either the seizing of opportunities, or allow him to combine or destroy the resources to give rise to an output is an entrepreneurial act. More precisely, it is the continuous exploitation of new productive opportunities that drives the growth of the Penrosian enterprise (Davidson & al., 2010) which she calls enterprising management. The acquisition of resources is a Schumpeterian entrepreneurial act occurring following a process of destruction and creation of new resources which generates an imbalance in the economic system. Growth in this design is the acquisition of new resources that will be combined in an innovative way.

This combination can be driven by seizing an opportunity arising in a dynamic environment. Barney et al. (2001); Dess & Davis (1984); Porter (1980) argues that the dynamic environment is a source of opportunities, and that entrepreneurs deploy resources to seize them. Such behavior is proven in studies by Porter (1980); Singh & Montgomery (1987). Opportunity seizing as an entrepreneurial action is advanced by Stevenson (1983); Stevenson & Jarillo (1986; 1990). Davidsson & al. (2010), considers that these two approaches complement each other because entrepreneurs take advantage of an opportunity by combining resources in an original way that has an impact on the market. The link between acquisition and entrepreneurship also emerges when entrepreneurs are required to make choices about whether or not to pursue growth (opting for growth is more entrepreneurial than not doing so) (Davidsson & al., 2010); market entry (established or not/with a new product or established), the mode of organization (Delmar & Shane. 2003; Low & MacMillan, 1988; Shane & Venkataraman, 2000; Shepherd & Wiklund, 2005;

Stevenson & Jarillo, 1990), on the mode of growth (McKelvie & Wiklund, 2010, Penrose, 1959). The choice is accompanied by important transformations and entrepreneurship is a matter of degree and not a dichotomous variable and e.g., developing Microsoft is at least more entrepreneurial than not doing so. Business growth is an aspect of entrepreneurship (entrepreneurship as the creation of a new economic activity or an alternative close to this notion) if it is achieved by the introduction of new products or services; if it is facilitated by entry into a new domain or by the increase of new constant resources.

For Davidsson & al. (2010), growth that comes from acquisition is not an aspect of entrepreneurship if it consists solely of an expansion of the volume of existing products based on demand or if it is achieved through the acquisition of commercial activities that were already in place in another organization. To this end, McKelvie & Wiklund (2010) report on the basis of several studies that the fact of a company accumulating financial assets (shares) does not constitute growth nor is it accompanied by a transformation. Davidsson & al. (2010) is of the opposite opinion, and maintains that holding a share in a company is not growth for the company holding these assets, but can lead to size effects for the other. The choice of growth mode has generated more debate. The studies look at the advantages of one mode over another and the sources that lead it there. First, Penrose (1959: 44-45) argues that entrepreneurs are more likely to pursue acquisitive growth because organic growth is limited by internal factors (management capacity), external factors (product markets e.g. growing demand for a particular product, technological changes that require larger-scale production, and discoveries or inventions that seem particularly promising to exploit) or mixed (uncertainty or risk), it is less automatic (requires target planning and resource allocation). Davidsson & al. (2010) argues that expansion in Penrose's model relies on the acquisition of knowledge; due to the fact that to take advantage of growth opportunities in the market, the company must have specialized resources and management capabilities. This knowledge is acquired over time (during the process of expansion, new management services must be created, and a general improvement in skills and efficiency takes place or in the acquisition of existing businesses (resources skills qualify) which will often lead companies to acquire related or concentric activities. Gilbert & al. (2006), lean towards acquisition by arguing that it allows the firm to expand its products and services offered or to extend their research into new markets without the development of skills. Also, by buying existing business, the firm benefits from that firm's reputation and market share growth. Examples of empirical studies can be found in Davidsson & al. (2010), Gilbert & al. (2006), Shepherd & Wiklund (2005). These studies conclude that SMEs choose to develop organically in view of

the means that development by acquisition requires, those who pursue development by acquisition can be a means of freeing up entrepreneurial activities in a company. The incentives are both internal, external or a combination.

These theoretical debates also carry over into the choice of empirical measures under an evolving trend. In the past, measures of organic growth have been successful (Davidsson & al., 2010; McKelvie & Wiklund, 2010). Currently even if the trend is to use this organic dimension, studies also apply the dimensions of acquisition, organic or a combination of these two (Chindi, 2020; Ortiz-de-Urbina-Criado & Angel-Guerra- Martin, 2014).

Holding additional resources may not only encourage the destruction of existing ones; but also, forcing SMEs to increase storage capacity, to change the manufacturing process, to train or increase staff, to change the way the company operates (for example, computers, internet, etc.). Therefore, growth is the increase in resources in the firm for both strategic and non-strategic positioning needs. It also designates the acquisition of organic resources, or the acquisition of expansion resources or either by a mix of acquisition of these resource modes.

**Internal organic expansion** comes from an increased combination of internal resources and referrals to the use of innovative processes or the development of marketing practices that can identify and develop products capable of captivating audiences (Davidsson, 1989; Delmar & al., 2003; Gilbert & al., 2006). It can also mean an acquisition of resources that will boost the internal organic increase or its internal production capacities. **Organic internal** expansion amounts to an increase in internal resources or internal production capacities which may relate to "the replacement of equipment, the increase in personnel". External growth **is done through the acquisition** of resources which is worth increasing the external size of the SME. It can be observed, for example, when an SME "increases facilities, increases its market share, extends its activities to other markets, new activities, partnership contract". An SME knows a **hybrid expansion** when it increases the resources which will imply the increase of its internal and external productive capacities. It can be observed, for example, when the SME has "trained employees, sets up a new product or service, diversifies its products or activities, improves its computer systems or its marketing department, etc.". Activities seeking to improve the reputation, those aimed at satisfying customers and building loyalty are part of this dimension. We recognized that these activities improve the entire configuration of the firm because they go through the mental preparation of the staff,

their training, their increase, and even increase their motivation (remuneration, working conditions, etc.). We recognize that registering an item in a dimension is difficult, a study can help to make this classification.

## DISCUSSION ON SOME APPROACHES AND MEASURES OF GROWTH DYNAMISM

Dynamism can have several meanings that boil down to power, vitality, energy, life, which drives a system. This concept is to be distinguished from dynamics. Growth dynamics relates to the movement (downward and upward variations) of growth over time. In the entrepreneurial literature, this concept is measured by a growth rate indicator. Various indices are mobilized in the literature.

### Classic measures of dynamism

The decision to acquire complementary or additional resources creates a dynamic in the resources, therefore in the growth of the SME. This dynamic can be spatial or temporal (variations) theoretically defined in the literature (Kozan & al., 2012; Lebrasseur & al., 2003). The spatial dimension is the fact that the entrepreneur makes an immediate decision to acquire other resources from other places (for example on the international market, geographical location) or other frills. Temporal dynamics reflect growth at a point in time (past or future), and not the reality existing on the markets but past decisions on resource acquisition<sup>1</sup>. Baumol (1962) develops a model that is a reference in the literature since several studies use different criteria (sales growth, employment growth, asset growth, profit growth, market growth, etc.) based on this model:

$$g_{it} = \frac{1}{n} \ln \left( \frac{x_{i,t}}{x_{i,t-n+1}} \right)$$
, (Arouri et al., 2018) (I);  $g_{it} = [\ln x(t') - \ln x(t)] / \mu$  (Evans, 1997, quoted by Papadaki and Chami, 2002) (II);  $x_i = x_j(1 + r/100)^\alpha$  (Altinay and Altinay, 2006; Adomako et al., 2021) (III);  $g(t) = \log(x(t)) - \log(x(t-1))$  (Vaz, 2021) (IV); or number of periods,  $x_{i,t}$  the value for the firm i period t the current duration and  $x_{i,t-n+1}$  the value, where  $x_{i,t}$  denotes the size of the firm measured according to the number of employees, G, the growth function, t, the time where  $t' > t$ ,  $\mu = t' - t$ , n number of periods,  $x_i$  Number of people employed by the firm during the survey period,  $x_j$  the number of employees in the year that the respondent (owner or responsible manager) took up his position,  $\alpha$  is the number years since the owner (manager) has had this business, and finally r. Other works measure growth either in absolute value or in relative value

<sup>1</sup> Is nothing but a prediction of the past subject to different selection biases.

We find in this suite the works of Hassan & Hart (2016) and Lebrasseur & al. (2003).

Following the path of Baumol (1962); Rufin (1973), the dynamics of growth is the maximum rate of

Let  $x_{c_N}, x_{c_I} \text{ et } x_{c_T}$  respectively be the organic, acquisitive and total growth,  $i_N, i_I \text{ et } i_{CT}$ , the opportunity costs of the organic, acquisitive and global resources, C the cost of acquiring resources, R the revenues, g: the growth rate:

$$x_{c_T} = x_{c_N}[\pi_N(g_N)] + x_{c_I}[\pi_I(g_I)]R_N \frac{1 + (i_N - i_I)i_N}{(i_N - i_I - g_N)^2} - C'R_N \frac{1 + \Delta i_N}{(\Delta i_N - g_N)^2} - C'(\Delta g_N) + R_I \frac{1 + \Delta i_I}{(\Delta i_I - g_I)^2} - C'$$

At the expansion rate g, the present value of the net revenue stream will grow indefinitely ( $P'P''P''' \dots P^{(n)}$ ) and its value will exceed any pre-established number as g approaches i, as shown by the net revenue curve, RR' in Figure 1. It is clear that nothing here limits the rate of expansion of the business.

Insert figure 1 here

Rubin extends Baumol's model by demonstrating that the expansion of the firm is a promotion of

Where  $x_j^t (j = 1, \dots, m); t = 0, \dots, L$  is the level of m profitable activities existing in period t, p (constant) the unit profit earned from activity j;  $f_j$  is the constraint function; L is the length of the planning period, which is the firm's time horizon, measured as a finite number of discrete time periods, and r is the interest rate. Suppose that  $f_j(\Delta i_N, i_N, R_N, R_I) = r$  is the opportunity cost, p is the price, the dynamics of the show-off is therefore:

$$\Delta x_{c_T} = \left( \frac{1 + \Delta i_N}{(\Delta i_N - g_N)^2} \right)^T R_N + \left( \frac{1 + \Delta i_I}{(\Delta i_I - g_I)^2} \right)^T R_I - \sum_{i=1}^n k_i^T \frac{\partial f_j}{\partial x_j^t}$$

### Dynamism of growth dynamics

The measure of growth dynamics is based on past values for which we had seen disadvantages. Kamien & Schwartz (1991); Oulhaj (2017) argue that the optimization problem only becomes truly dynamic when today's production level determines not only today's profit, but also the profits of future periods. The measurement of the dynamics of SME growth defined by Lebrasseur & al. (2003) in terms of sales growth rate (the change in growth rate, measured by sales volume, recorded by a company during its early years and links growth intentions and sales activities) and more later by other authors; nothing but a prediction of the past subject to different selection biases (and this despite the strong correlation found between intention and real sales growth). The results they find decouple actual growth from that anticipated, and studies have found difficulty measuring growth.

To speak of the term dynamism, the firm must be part of a present and future temporal approach. The danger is that the trend will treat the results obtained on a single variable obtained in the pass. In response to this difficulty, Kozan & al. (2012), argue that growth momentum provides a better measure of entrepreneurship than past growth alone. They advocate the use of an indicator that captures past growth and growth intention. They lead to a typology of four groups of SMEs: SMEs in decreasing or

growth which maximizes past, present and future size. By maximizing size, the entrepreneur seeks a maximum growth rate:

resources and that the possession of the resource cannot be separated from the firm, starting from a simple case of a firm that wants increasing the quantities of existing resources in order to increase the levels of existing activities finds that its optimal value using Kuhn-Tucker conditions is given by:

$$\left( \frac{1}{1+r} \right)^T p_j \leq \sum_{i=1}^n k_i^T \frac{\partial f_j}{\partial x_j^t}$$

decelerating growth, SMEs in stagnating growth, SMEs in accelerating growth and SMEs in strong (continuous) growth. If this work measures an important static classification and presents a strong validation of the scale for measuring the growth of an SME; nothing is said about the growth phases or about the probability for an SME to change growth phase, about the forms of validity (of content, linked to criteria and construction.) and of reliability (in stability and equivalence) of the measurement scale (Hair & al., 2010: 3, 6-9; Kothari, 2004:69-82).

The study in question uses a Likert metric measurement scale on which mathematical operations are possible. Indeed, if these Likert summation scales are more used than Thurstone differential scales for various reasons (easy to set up and are reliable: respondents respond to each statement included in the instrument, provide more information, allows the use of statements that are not obviously related); using Louis Guttman's cumulative scales (or scalogram analysis) would have given a more reliable growth indicator (Kothari, 2004:69-82).

Likewise, by associating transformations (by integral, monotonic, log normal) (see Van, 1971; 1991) with these measurements obtained by the scales would make it possible to measure real growth since entrepreneurs are questioned on real growth and on that future. Such an approach releases the

energy with which the economy can be conducted and would explain Keynesian or classical oscillations in economic performance. In this theory, entrepreneurs on the basis of expectations drive production, employment and inflation. A good/bad vision of the entrepreneur on future economic activities based on past forecasts can lead him to vary the size/process by increasing or reducing the acquisition of resources. This dynamic growth drives the economy in the short and long term. Growth dynamism, unlike Penrosian growth dynamics, can lead to significant upward or downward movements. McKelvie & Wiklund (2010) show that achieving growth can help stimulate future growth in that an entrepreneur who tastes success and is incentivized for future growth; just as future growth intentions that come as a result of strong past growth may be the result of different cognitive and emotional processes than growth intentions that attempt to compensate for recent poor growth.

The resource theory allows us to identify the dynamism of growth as a variation in an amount or quantity that the entrepreneur hopes to have based on the quantities of resources used currently or in the past. Understanding the dynamism of growth in the resource model makes it possible to respond to the major concern which did not allow the growth concept to emerge as put forward by Delmar (1997), subsequently Davidsson & al. (2010), Gilbert & al. (2006), McKelvie & Wiklund (2010) who argue that growth did not emerge following the theoretical problem posed by its understanding.

The dynamism of growth combines real growth (past or present) and the desire for growth (intuition, anticipation, future) (the theory of planning behavior maintains that the intention precedes the act.). In resource theory, the dynamism of growth implicitly takes an important place. This concept is evoked by the authors without realizing it. This theory adopts many of the same assumptions as the broader resource-based view that economic actors (whether firms or individuals) are strictly rational utility maximizers, that markets can vary in their competitiveness, that information may vary in the way it is disseminated in a market and so on.

The dynamism of growth can maintain several links with entrepreneurship that emerge in resource theory. In planning its expansion, the firm considers the active juxtaposition of its own "inherited" resources and those which it must obtain from the market in order to carry out its program of activities (Barney, 1991; Caves, 1980). The dynamics of growth is based on the implementation and deployment of strategies to respond to environmental opportunities; to find a balance between the exploitation of existing resources and the development of new resources as pointed out by Barney (1999) and Wernerfelt (1984) Growth as an output can have consequences on multiple variables, including the well-being of the entrepreneur This thesis will not be developed in this work, but we

believe that well-being can serve as a unique resource for managing the dynamic growth of a firm.

### Proposed measures

The dynamism of growth is based on the company's growth concept in the sense that it retains three modes of growth and several items must constitute it. The difference comes first in the fact that the dynamism of growth is calculated on the basis of intentions and real growth (whether in the past or in the current period), and on this basis the growth rate and that of Growth momentum may have different meanings at certain levels. The number 0 or other low values (<10) mean absence or low dynamism, which is not the case for growth dynamism (0 can mean continued dynamism). For example, an SME which can accept having increased its resources in past years and which is strongly convinced that it will increase them in the future years, can be assigned a value of 0 when calculating its dynamism rate. Transformations must be necessary for these kinds of results. Also, the measures of dynamism must be updated or capitalized since it is measured on different dates. The measurement of dynamism becomes more complex than simple growth because it is based on the accumulation of several resources which involves different processes. In this case if the study uses structural equations, it can go through a logarithm transformation of some in the following way:

$$x_{ji} = \ln x_j (1 + r/100)^\alpha$$

$x_{ji}$  is resource j for SME i

The mode of growth can be a geometric growth obtained in this way:

$$E(XCE_{t+1}) = \sqrt[j]{\prod_{j=1}^J x_{ji}} \text{ ou } XCE_{t+1} = \sqrt[j]{\prod_{j=1}^J x_{ji}}$$

Multidimensional measures that assume that the functional form of resource constitution is a linear application (or transform) acquire by the firm in a defined time:

$$DYXCE_t = E(XCE_{t+1}) - XCE_{t-1} \text{ ou } DYXCE_t = Df XCE_{t+1} + Df XCE_{t-1}$$

When a resource is assumed to follow some form  $E(XCE_{t+1}) = f(\cdot)$  ou  $XCE_{t-1} = f(\cdot)$  but some approximation of the function is possible, the rate of dynamism can be calculated by the following formula:

$$g_{it} = [\ln E(XCE_{t+1}) - \ln XCE_{t-1}] / \mu$$

The measurement that we propose is this for empirical studies. Based on this scale, we have estimated the dynamics of growth by the following formula:

$$Dx_t^j = \frac{\sqrt{DX_{iP}^j \times DX_{iF}^j}}{100} = \sqrt{\frac{DX_{iF}^j}{DX_{iP}^j}} - 1$$

Or

$$DX_{iP}^j = (\ln X_{-3}) \times \left[ \left( 1 + \frac{\sqrt{\frac{X_t^j}{X_{t-3}^j} \times \frac{X_{t+3}^j}{X_t^j} - 1}}{100} \right)^3 \right]$$

$$DX_{iF}^j = (\ln X_{+3}) \times \left[ \left( 1 + \frac{\sqrt{\frac{X_t^j}{X_{t-3}^j} \times \frac{X_{t+3}^j}{X_t^j} - 1}}{100} \right)^{-3} \right]$$

This indicator of a firm's growth dynamism measures the manner in which the firm efficiently and dynamically allocates resources, and also emphasizes the extent of the dynamics of the spirit of the activity of enterprise as desired by certain theorists of firm growth (Baumol, 1962; Davidsson & al., 2010; Delmar, 1997; Delmar & al., 2003; Gilbert & al., 2006; Lebrasseur & al., 2003; Lucas, 1978; Mahoney & Rajendran, 1992; McKelvie & al., 2011; Penrose, 1959; Rubin, 1973; Shepherd & Wiklund, 2010; Storey, 1999) rather than solely on the efficient use of resources such as turnover, productivity and profit margin (Freel & Robson, 2004, cited by Kozan & al., 2014)...

In the measures of the dynamism of the growth the gap between past and future is important. A firm can access several resources and several measures can provide. The components of an SME's growth and the dynamism of growth are presented in the following tables:

Table 1 to be inserted here

Nominal or ordinal values can also undergo monotonic transformations. Measures based on continuous values can draw attention to the significance of 0 when calculating the index of growth dynamism. For objective measurements the following classification can emerge:

Table 2 to be inserted here

Schematically the dynamism of the growth of the SME is presented as follows:

Figure 2 to be inserted here

## CONCLUSION AND IMPLICATIONS

### Conclusion

In this study, growth is seen as an indirect increase in size resulting from the acquisition of resources, the dynamics of growth as a resulting growth rate. The dynamism of growth has implications for the economy as a whole and for entrepreneurship. The

dynamic mode of SME growth is more beneficial to an economy than SME growth.

This work opens up other broad fields for researchers wishing to explore this theme in more depth. A first task may consist of identifying the reasons why certain SMEs could experience greater growth dynamism than others. This involves identifying a wide range of factors, from entrepreneur characteristics to access to resources such as human capital and financing, that have emerged as explaining why some businesses grow more than their counterparts. A second would focus on key factors neglected in the growth literature, including well-being, entrepreneur effort, the environment and the dynamics of entrepreneur profiles.

Future studies can also analyze the impact of growth dynamism on customer satisfaction level, SME reputation, entrepreneur well-being, etc. Another category of studies could concentrate on the validation of the forms of functions of growth dynamism, or focus on the search for methods of solving the equations developed here. Finally, the use of psychometric approaches would help to better validate this concept. By continuing empirical research into the dynamism of SME growth, the field will improve understanding of this complex process while moving toward helping entrepreneurs achieve the ultimate measures of performance, longevity, and wealth creation as highlighted in the entrepreneurial literature.

### Implications

In this work, several implications can be identified. The first concerns the view based on resources. The resource-based perspective provides a solid theoretical grounding for understanding the dynamism of an SME's growth. It is based on two paradigms which rely on the possession of specific resources. The first paradigm is based on Penrose's conception and the second is based on Barney's. These paradigms define growth as a direct increase in the size of the firm which comes from the holding of resources according to the mode of growth pursued (acquisition, organic and mixed). We prefer to use the term resource theory rather than resource-based perspectives, since other resources can help build growth (reputation, customer satisfaction, well-being, profile, etc.) than those traditionally used (capital financial, human capital). Resource theory has shown that the expansion of external and internal resources leads indirectly to Penrosian growth in the size and quality of the SME. In Penrose's vision (1959), and later in Barney, Davidson, Porter, Wiklund, Gilbert; the acquisition and the organic increase is an entrepreneurial behavior which passes by the will and the real act. In their visions, expansion occurs directly through growth in size. The vision developed in this work, defines growth as an indirect increase in the size of

the SME following an acquisition of resources implied by behaviors of identification and seizing of the opportunities of the entrepreneurs. Acquiring additional resources for this purpose is growth. This implies that this concept is easier to implement in SMEs, especially those operating in developing countries. The latter find it difficult to merge (information on competitors), operate in different markets, misunderstand this classic concept of growth, and have difficulty applying corporate policies and strategies. The resource theory also offers explanations on why SMEs that can access particular resources, plan and anticipate their growth acquire an advantage over others, which allows them to grow and achieve good results. in an environment of opportunities and constraints.

The creation of a growth indicator based on resources requires precision on the functional form to be retained. The fact that resources come from different theories and therefore follow different processes leads to the rejection of linear models. The studies were based on the indicator developed by Baumol (1962) which assumes that the growth rate has an exponential form to statistically calculate the growth rate (growth dynamics). Such a result therefore implies that empirical work should focus on prior transformations (for example linearizing the data to then calculate the statistical parameters (mean, medians, etc.)) before moving on to estimates. Mathematically, the studies assume that the growth function is monotonically increasing, the construction of which comes from the objective of maximizing the several activities constrained by the costs of resources after passing the Kun-Tucker conditions (Lucas, 1962; Rubin, 1973). The indicator developed in this study therefore followed these conditions.

The dynamism of growth is not far from this term "growth". In its definition it is based on the theory of growth and that of planned behavior; and intervenes when there is a difference between a real quantity of additional resources acquired (in at most 5 years, 6 months past) and the quantity of resources desired after anticipation on the activity (in at most 5 years, 6 months future). Similarly, dynamism is observed when the entrepreneur in the present decides to increase his available resources hoping for a bright future, considering what had happened on the market in the past. In an optimization language, it is a matter of maximizing the gap between current and future activity under the constraints of the gaps between current and future resources.

Understanding the dynamics of SME growth is so important for practitioners, policy makers and researchers. It makes it possible to answer the question of knowing what means the growth of the SME / how it is formed or "how" the companies develop which has remained hanging in the literature. Policy makers can therefore easily assess the success and development of SMEs and easily

tackle how to create resources at lower social costs. Just as a country with high national resource potential will have more growing SMEs than other countries, so resource creation policies contribute to growth. The concept is simple and allows a simple understanding of the phenomenon by even the layman. Such a conceptualization may have implications for other entrepreneurial issues. The variations of the dynamism can allow the improvement of the satisfaction of the customers (External acquisition can come from the customers) and the reputation of the firm by a rapprochement, generate permanent revisions of the production process, combinations and permanent innovations allows the firm to see its production process. A dynamism constitutes a material, financial guarantee to the partner's loan and can facilitate access to financing.

Another implication comes from the classical importance of a mode of growth according to economic actors (Vaz, 2013). Policy makers have a preference for organic modes of business growth since it helps increase employment, develop the economy, collect more taxes and improve the profile of the city, region and country (McKelvie & Wiklund, 2010). Growth through acquisition is more attractive for entrepreneurs since they grant high financial profits at the lowest cost. This mode is less preferred by policymakers who believe that it transplants jobs and has zero gain at the macroeconomic level. Dynamism can help resolve the concerns of each other.

Concerning the modes, it has been shown that the acquisition of resources (resource growth) is accompanied by an overall growth of all indicators. Therefore, a neutrality of entrepreneurs' preferences would be observed in any mode of the dynamism of SME growth. The position adopted in this work sheds light by showing that the position pursues more beneficial than the pursuit of the simple growth of the SME at the microeconomic and macroeconomic level. Dynamism occurs following the seizing of opportunities conditioned by the skills and know-how of entrepreneurs. Decision-makers should get involved in recognition and seizure policies. Since it has been argued that entrepreneurs with higher university education are more innovative and will use modern techniques and models to do business (Gupta & al., 2013; McPherson, 1996; Pajarinen & al., 2006; Timan & Gangi, 2015). They are also able to explore the environment, discover opportunities and exploit them after appropriate evaluation (Barringer & Bluedorn, 1999). At the global level, the emphasis on access to education for all would create such conditions. At the level of entrepreneurs and SMEs, organize seminars in which entrepreneurs share experiences.

Specific resources are at the center of driving growth and seizing opportunities. Such resources can come from policies put in place to encourage and support dynamic growth. For example, intellectual property

rights and transaction costs, facilitating access to capital markets (which function well and on which companies and entrepreneurs can raise the necessary funds) can facilitate the production of resources (Zander & Zander, 2005). Economic policies (e.g., increasing market demand by distributing income to employees) can help create resources. These policies that modify general economic conditions have direct repercussions on the number of companies that grow organically, but also on the choice between growth modes. During periods of crisis, recovery policies that involve dynamic growth would appear to be an effective tool. Unlike Delmar et al. (2003) who showed that during economic recessions, growth by acquisition became more common, while organic growth dominated in times of prosperity; entrepreneurs will be indifferent as to the modes of growth dynamism used during these periods.

The persistence of the crises that the world is currently experiencing despite stimulus policies that are based on the growth of businesses initiated by policies can be justified and resolved by resorting to the dynamism of growth. In the United States, the employment incentive policies put in place by the federal state have been doomed to failure. The failure of such policies stems from the fact that entrepreneurs whose ideology is neoliberal viewed these initiatives poorly. (The entrepreneur focuses aggressively only on profit from innovation and growth of the business) (Vaz, 2013). Investments have not followed as they believe it has not been market driven and therefore less profitable. European countries are currently facing such a problem where workers and owners blame each other and we see terms like super-profit emerging. The dynamism of the growth of an SME could solve such a crisis. In developing countries, particularly Sub-Saharanans, due to the lack of preparation and lack of support, SMEs can use their dynamism to survive. Despite these strong implications, we will draw attention to the calculation of the rate of dynamism of the growth of a company which may require complicated (or even non-existent) resolution methods. Likewise, the meaning of 0 (some zeros are not absolute) or lower values (do not necessarily mean weak growth dynamism or its decline). Transformations (e.g. imposing higher fictitious values by analyzing the growth interval) at this level can help address these concerns.

## BIBLIOGRAPHY

-Ahlstrom, D. & Bruton, G.D. 2003. An Institutional Perspective on the Role of Culture in Shaping Strategic Actions by Technology-Focused Entrepreneurial Firms in China.  
-Ahlstrom, D. 2010. Innovation and Growth: How Business Contributes to Society. *Academy of Management Perspectives*, 24:11-24. <https://doi.org/10.5465/AMP.2010.52842948>.

-Ajzen, I. 1991. The Theory of Planned Behavior. *Organizational behavior and human decision processes*, 50: 179-211.  
-Ajzen, I. 2020. The theory of planned behavior: Frequently asked questions.  
-Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice-Hall.  
-Barney, J.B. 1986. Organizational Culture: Can It Be a Source of Sustained Competitive Advantage? *The Academy of Management Review*, 11: 656-665. <https://www.jstor.org/stable/258317>.  
-Barney, J.B. 1991. Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17:99-120.  
-Barney, J.B. 2001. Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management*, 27: 643.  
-Barringer, B.R., & Bluedorn, A.C. 1999. The relationship between corporate entrepreneurship and strategic management. *Strategic Management Journal*, 20: 421-444 (1999)  
-Barringer, B.R., & Greening, D.W. 1998. Small business growth through geographic expansion: A comparative case study. *Journal of Business Venturing*, 13 : 467-492  
-Barringer, B.R., Jones, F.F., & Neubaum, D.O. 2005. A quantitative content analysis of the characteristics of rapid-growth firms and their founders. *Journal of Business Venturing*, 20: 663-687.  
-Baumol, W.J. 1962. On the Theory of Expansion of the Firm. *The American Economic Review*, 52: 1078-1087.  
-Bibu, N.A., & Sala, D.C. 2014. Aspects of fast growth in Romanian companies. The case of a successful company in Timis county. *Procedia - Social and Behavioral Sciences*, 124: 263 – 271.  
-Birch, D.L., & Medoff, J. 1994. Gazelles, in Lewis C. Solmon and Alec R. Levenson, eds. *Labor Markets, Employment Policy and Job Creation*, Boulder: Westview Press, pp159-168.  
-Burke, A., Fraser, S., & Greene, F.J. 2010. The Multiple Effects of Business Planning on New Venture Performance. *Journal of Management Studies*, 47:3.  
-Carree, M.A., & Verheul, I. 2011. What Makes Entrepreneurs Happy? Determinants of Satisfaction Among Founders. Springerlink.com.  
-Caves R. E., & Porter M. E. 1977. From Entry Barriers to Mobility Barriers: Conjectural Decisions and Contrived. Deterrence to New Competition. *The Quarterly Journal of Economics*, 91: 241-262. <https://www.jstor.org/stable/1885416>.  
-Caves, R.E. 1980. Industrial Organization, Corporate Strategy and Structure. *Journal of Economic Literature*, 18: 64- 92. <https://www.jstor.org/stable/2723892>.  
-Chen, X., Zou, H., & Wang, D.T. 2009. How do new ventures grow? Firm capabilities, growth strategies and performance. *International journal of research in marketing*, 26: 294-303.

- Davidsson, P. 1989. Continued Entrepreneurship and Small Firm Growth. A Dissertation for the Doctor's Degree in Business Administration Stockholm School of Economics 1989
- Davidsson, P., Achtenhagen, L., & Naldi, L. 2010. Small Firm Growth. *Foundations and Trends in Entrepreneurship*, 6: 69-166. <http://dx.doi.org/10.1561/03000000029>.
- Delmar, F. 1996. Entrepreneurial Behavior and Business Performance. Dissertation for the Doctor's Degree in Philosophy Stockholm School of Economics.
- Delmar, F. 1997. Measuring Growth: Methodological Considerations and Empirical Results. *Entrepreneurship and SME Research: On its Way to the Next Millennium*, 199-216. Aldershot, England: Ashgate. Published in Donckels, R. & A. Miettinen.
- Delmar, F., & Shane. 2003. Does business planning facilitate the development of new ventures? *Strategic Management Journal*, 24 : 1165-1185.
- Delmar, F., & Wiklund, J. 2008. The Effect of Small Business Managers' Growth Motivation on Firm Growth: A Longitudinal Study. *Entrepreneurship Theory and Practice*, 32. <https://doi.org/10.1111/j.1540-6520.2008.00235.x>
- Delmar, F., Davidsson, P., & Gartner, W. 2003. Arriving at the high growth firm. *Journal of Business Venturing*, 18: 189-216.
- Demir, R., Wennberg, K., & McKelvie, A. 2017. The Strategic Management of High-Growth Firms: A Review and Theoretical Conceptualization. *Long Range Planning*, 50: 431-456.
- Deng, P. 2009. Why do Chinese firms tend to acquire strategic assets in international expansion? *Journal of World Business*, 44: 74-84.
- Dess, G.G., & Davis, P.S. 1984. Porter's (1980) Generic Strategies as Determinants of Strategic Group Membership and Organizational Performance. *The Academy of Management Journal*, 27: 467-488. <http://www.jstor.com/stable/256040>.
- Dobbs, M., & Hamilton, R.T. 2007. Small business growth: recent evidence and new directions. *International Journal of Entrepreneurial Behaviour & Research*, 13: 296-322.
- Eisenhardt, K.M., & Martin, J.A. 2000. Dynamic Capabilities: What Are They? *Strategic Management Journal*, 21: 1105-1121. <http://www.jstor.com/stable/3094429>.
- Gilbert, B.A., McDougall, P.P., & Audretsch, D.B. 2006. New Venture Growth: A Review and Extension. *Journal of Management*, 32 : 926-950. <https://doi.org/10.1177/0149206306293860>
- Gupta, P.D., Guha, S., & Krishnaswami, S.S. 2013. Firm growth and its determinants. *Journal of Innovation and Entrepreneurship*, 2:15. Springer. <http://www.innovation-entrepreneurship.com/content/2/1/15>.
- Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. 2010. *Multivariate Data Analysis (7e ed)*. Pearson Prentice Hall, 761.
- Julien, P.A. 2000. Les PME à forte croissance : les facteurs explicatifs. Congrès de l'Association internationale de management stratégique Montpellier, 24-26 mai 2000.
- Julien, P.A. 2001. Les PME à forte croissance et la métaphore du jazz. Comment gérer l'improvisation de façon cohérente. *Revue internationale P.M.E.*, 14 : 129-161. <https://doi.org/10.7202/1008700ar>.
- Kogut, B., & Zander, U. 1992. Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology. *Organization Science*, 3:383-397. DOI: 10.1287/orsc.3.3.383
- Kozan, M. K., Oksoy, D., & Ozsoy, O. 2012. Owner sacrifice and small business growth, *Journal of World Business*, 47: 409-419.
- Lebrasseur, R., Zanibbi, L., & Zinger, T.J. 2003. Growth Momentum in the Early Stages of Small Business Start-ups. *International Small Business Journal*, 21: 315-330.
- Lieberman, M.B. & Montgomery, D.B. 1988. First-Mover Advantages. *Strategic Management Journal*, 9: 41-58. <https://www.jstor.org/stable/2486211>.
- Locke, E., & Latham, G.P. 1991. A Theory of Goal Setting & Task Performance. *Academy of Management Review* · April 1991, 212-247.
- Lucas, R.E. 1978. On the Size Distribution of Business Firms. *The Bell Journal of Economics*, 9:508-523.
- Mahamat, A.A., Seini, H., & Mazra, M. 2020. Le rôle modérateur de l'auto-efficacité entrepreneuriale dans la relation intention de croissance et croissance des pme. *African management review*, 5: .1-17. <http://revues.imist.ma/?journal=RAM>.
- Mahoney, J.T., & Pandian, J.R. 1992. The Resource-Based View Within the Conversation of *Strategic Management*. *Strategic Management Journal*, 13: 363- 380. <https://www.jstor.org/stable/2486455>.
- McKelvie, A., & Wiklund, J. 2010. Growth Mode Instead of Growth Rate. *Entrepreneurship theory and practice*, 34 : 261-288.
- McPherson, M.A. 1996. Growth of micro and small enterprises in southern Africa. *Journal of Development Economics*, 48: 253-277.
- Miller, D., & Friesen, P.H. 1978. Archetypes of Strategy Formulation. *Management Science*, 24: 921-933. <https://www.jstor.org/stable/2630632>.
- Montgomery, C.A. 1985. Product-Market Diversification and Market Power. *The Academy of Management Journal*, 28: 789-798. <https://www.jstor.org/stable/256237>
- Mubagwa, C, M, (1999), The Accumulation of Input factors and the Growth of Agricultural Production in Sub-Saharan Africa: A comparative Analysis With East and Southeast Asia, PhD dissertation, Nagoya University
- Nelson, R.R., & Winter, S.G. 1982. An Evolutionary Theory of Economic Change. University of Illinois, Available at SSRN: <https://ssrn.com/abstract=1496211>

- Ngek, B.N., & Vanzyl, J. 2014. Growth Intention and Its Impact on Business Growth amongst Smes in South Africa. *Mediterranean Journal of Social Sciences*, 5.
- Nichter, S., & Goldmark, L. 2009. Small Firm Growth in Developing Countries. *World Development*, 37: 1453-1464.
- Ortiz-de-Urbina-Criado, M., Guerras-Martin, L.A., & Montoro-Sanchez, A. 2014. The choice of growth method: strategies and resources. *de Administracion*, 27: 30-45.
- Oulhaj, L. 2017. Méthodes mathématiques avancées pour l'analyse économique. Rabat: OCP Policy Center, 334.
- Pajarinen, M., Rouvinen, P., & Ylä-Anttila, P. 2006. Uusyrittä jien kasvuhakuisuus, KTM julkaisuja 29/2006. Helsinki: Ministry of Employment and the Economy.
- Papadaki, E. & Bassima, C. 2002. Les facteurs déterminants de la croissance des micro-entreprises au Canada. Direction générale de la politique de la petite entreprise Industrie Canada.
- Penrose, E. 1955. Limits to the Growth and Size of Firms. *The American Economic Review*, 45: 531-543. <https://www.jstor.org/stable/1823582>.
- Penrose, E. 1959. The theory of the growth of the firm. Fourth edition. Oxford University Press Inc.
- Porter, M.E. 1980. Industry Structure and Competitive Strategy: Keys to Profitability. *Financial Analysts Journal*, 36: 30-41. <http://www.jstor.com/stable/4478361>.
- Porter, M.E. 1985. The Contributions of Industrial Organization to Strategic Management. *The Academy of Management Review*, 6: 609-620. <https://www.jstor.org/stable/257639>.
- Powell, T.C. 1992. Strategic Planning as Competitive Advantage. *Strategic Management Journal*, 13: 551-558.
- Rubin, P.H. 1973. The Expansion of the Firms. *Journal of Political Economy*, 81: 936-949. <https://www.jstor.org/stable/1831135>.
- Shane, S., & Venkatarama, S. 2000. Note the promise of entrepreneurship as a field of research. *Academy management review*, 25: 217-226.
- Shane, S.A. 1996. Hybrid Organizational Arrangements and Their Implications for Firm Growth and Survival : A Study of New Franchisors. *The Academy of Management Journal*, 39: 216-234. <https://www.jstor.org/stable/256637>.
- Shepherd & Wiklund, 2005. Entrepreneurial Orientation and Small Business Performance: A Configurational Approach. *Journal of Business Venturing*, 20: 71-91.
- Stevenson, H.H., & Jarillo, J.C. 1986. Preserving entrepreneurship as companies grow, *Journal of Business Strategy*, 7: 10 - 23. <http://dx.doi.org/10.1108/eb039138>.
- Stevenson, H.H., & Jarillo, J.C. 1990. A Paradigm of Entrepreneurship: Entrepreneurial Management. *Strategic Management Journal*, 11: 17-27. <http://www.jstor.com/stable/2486667>.
- Uy, M.A., Sun, S., Foo, M. 2016. Affect spin, entrepreneurs' well-being, and venture goal progress: The moderating role of goal orientation. *Journal of Business Venturing*. Elsevier Inc.
- Van Praag, B.M.S. 1971. The welfare function of income in Belgium: An empirical investigation. *European economic review*, 31 :337-369
- Van Praag, B.M.S. 1991. Ordinal and cardinal utility: An integration of the two dimensions of the welfare concept. *Journal of Econometrics*, 50:69-89.
- Varadarajan, P.R., & Ramanujam, V. 1987. Diversification and Performance: A Reexamination Using a New Two-Dimensional Conceptualization of Diversity in Firms. *Academy of Management Journal* 1987. Vol. 30. No. 2, 380-393.
- Vaz, R. .2021. Firm growth: A review of the empirical literature. *Revista Galega de Economía* 2021, 30. <http://dx.doi.org/10.15304/rge.30.2.7190>.
- Wernerfelt, B. 1984. A Resource-Based View of the Firm. *Strategic Management Journal*, 5: 171-180.
- Woywode, M. & Lessat, V. (2001). Les facteurs de succès des entreprises à croissance rapide en Allemagne. *Revue internationale P.M.E.*, 14 : 17-43. <https://doi.org/10.7202/1008696ar>.
- Young, M.N., Tsai, T., Wang, X., Liu, S., & Ahlstrom, D. 2014. Strategy in emerging economies and the theory of the firm. *Asia Pac J Manag*, 31 : 331-354. Springer inc.
- Zahra, S.A., Ireland, R.D. & Hitt, M.A. 2000. International Expansion by New Venture Firms: International Diversity, Mode of Market Entry, Technological Learning, and Performance. *The Academy of Management Journal*, 43: 925-950. <http://www.jstor.org/stable/1556420>.
- Zampetakis, L.A., Bakatsaki, M., Kafetsios, K., & Moustakis, V.S. (2016), Sex differences in entrepreneurs' business growth intentions: an identity approach. *Journal of Innovation and Entrepreneurship*, 5-29. <https://www.researchgate.net/publication/309234784>.
- Zander, I., & Zander, U. 2005. The Inside Track: On the Important (But Neglected) Role of Customers in the Resource-Based View of Strategy and Firm Growth. *Journal of Management Studies*, 42:8. Blackwell Publishing Ltd.
- Zupic, I., & Giudici, A. 2018. New Venture Growth: Current Findings and Future Challenges. 192: 2-30.

#### FOOTNOTE

1. It explains the success and survival of SMEs, contributes to its sustainable viability (sustainability), provides employment, maintains links with entrepreneurship, etc.; the absence of a large size resulting from growth reduces the chances of survival of the firm.
2. This is the duality noted in microeconomics (Varian, 1998) according to which either pursue the maximization of its size by specifying the resources, or for a desired growth dynamic, seek the minimum resources to achieve it. Moreover,

as SME is a constitution of resources (Penrose, 1959; Wernerfelt, 1984), therefore, increasing resources amounts to increasing the size of the firm as Penrose support.

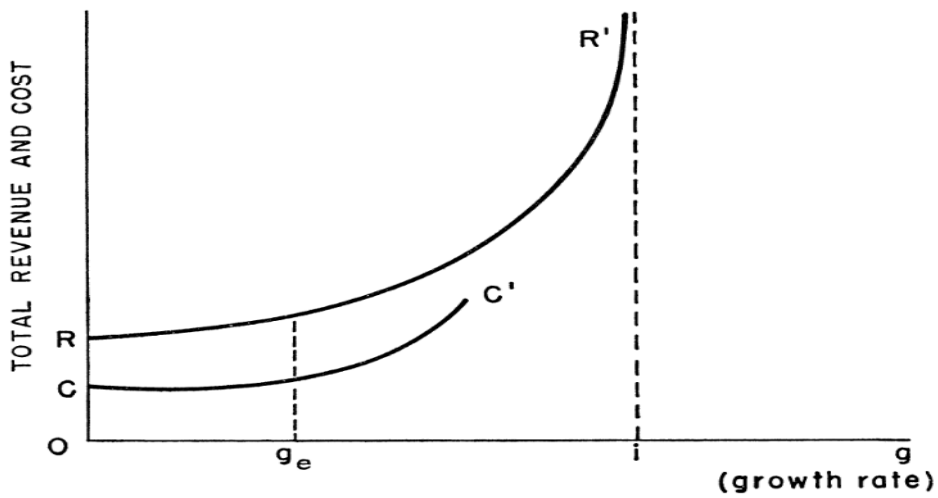
3. The dynamic of growth is the increase in the size or qualitative improvements of the capital, in procedure, in experience, of the different operations of a company, such as cash flow, net income, customer base (Murphy, Trailer, and Hill, 1996), reputation; and more importantly, growth in sales, employment and market share.
4. This theory adopts many of the same assumptions as the neoclassical resource-based view which states that economic actors (whether firms or individuals) are strictly rational utility maximizers, operating in markets competitive firms varying in their competitiveness by the way information varies in its dissemination in a market. The most salient feature of this theory is the emphasis on the acquisition of a unique resource (with certain characteristics) enabling strategic formulation that can be a strength of the company. In other words, the way in which the SME uses resources to design and implement a strategy capable of providing it with a sustainable competitive advantage and how this can impact its growth dynamism (efficiency). It shows how an effective Schumpeterian combination after the entrepreneur has seized an opportunity and anticipated it provides him with a lasting competitive advantage.
- 5 Among others: heterogeneities over time, growth measurements, separability of indicators, nature (subjectivity/objectivity), absolute variable (large companies) and relative (small companies)/logarithm (asymmetry).
- 6 According to Barney, (1991, 2001), Barney & al. (2001) sustainable competitive advantage must be conditioned by the conditions of existence of barriers to entry, heterogeneity of resources, inelasticity of supply of resources and immobility of resources. The existence of the barrier to entry or to mobility implies that an SME can implement different strategies from those of other SMEs without the latter succeeding in imitating it. This advantage is reinforced by the inelasticity in resource supply that emanates from the fact that some resources and abilities can only be developed over long periods of time (e.g. abilities), and others cannot. be bought or sold on the market (Barney, 1991).
- 7 Contacts with established customers generated ideas and business opportunities that required the assimilation of new skills and resources, sometimes coinciding with the company's existing and more broadly defined skills shows that the return to normalcy spoken of Penrose (1959), only growth can work
- 8 We maintain like Delmar (1997) that a reliable measurement depends on the memory of the

respondent therefore the period must be less than 5 years. Delmar advocated a 3-year limit because at that time most entrepreneurs can remember sales figures and employment rates with some accuracy.

- 9 This theory explains how specific actions in specific contexts where individuals have some, but incomplete, control over the outcome, placing intentions at the center of analysis (Shepherd & Wiklund, 2005). According to the cognitive theory of planned behavior (Ajzen, 1980, 1991; Fishbein & Ajzen, 1981), actions can be predicted by intentions. Oiseau(1988, 1992) described intentions as a cognitive tension between the company's vision and current conditions. As a general rule, the stronger the intention to engage in a behavior, the more likely its occurrence should be" (Ajzen, 1991: 181).
- 10 Changes in the company or in institutions can cause the entrepreneur to change his objectives. Initial conditions can also be a booster of growth motivations. Example McKelvie & Wiklund (2010) an entrepreneur forced to work full time for the company after being made redundant from regular employment or confidently believing in the company's potentially increased levels of "success". They show that companies that welcome new owners are often different from those of previous owners (depending on the goals of the venture capitalists, the company tries to grow as much as possible in order to provide returns to the venture capitalists). Companies that go public also tend to have higher growth requirements.
- 11 A franchisee enters into a legal agreement with a franchisor in exchange of use of their intellectual property of this last. The franchisor receives a compensation for use of this active; generally, a lump sum payment and a fee based on an agreed measure. The franchise must also join the requirements defined by the franchisor, such that the maintenance of the standards of quality, of the procedures operating and some range of products (Combs et al.)
- 12 implies that licensors sell the rights to use an element of intellectual property to a licensee
- 13 involve a collaboration between two or several companies with the aim of pulling of the synergies or to exploit the resources of the other. The wedding rings strategic have tendency to be more informal by nature, while joint ventures lead to the pooling of resources in a newly created legal entity it constitutes a form of growth since they allow the company to obtain, to overcome the lack of resource at a lower cost instead of developing it by itself whose production would have required more effort and time.

TABLE AND FIGURES

Figure 1: Growth rate of Baumol



Source: Baumol (1962)

Figure 2: Dynamics of growth

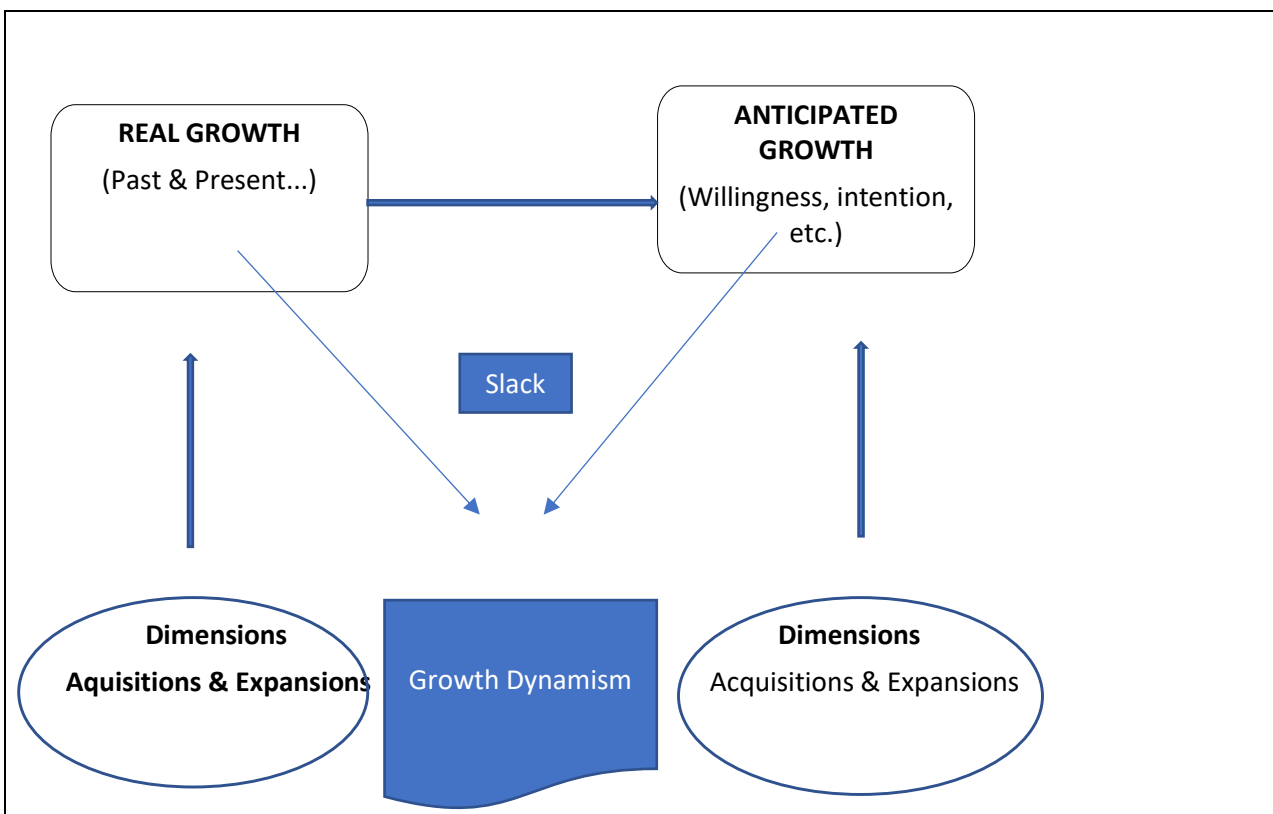


Table 1: Some measures of dynamism

Measures	Past/current growth		Anticipated growth	
	Subjective	Objectives	Subjective	Objectives
	Measurement scales	Values	Measurement scales	Values
Building	Ordinal or Continuous	Actual or nominal	Ordinal or Continuous	Real or nominal
Furniture	Ordinal or Continuous	Real or nominal	Ordinal or Continuous	Real or nominal

Placement	Ordinal or Continuous	Real or nominal	Ordinal or Continuous	Real or nominal
Stocks	Ordinal or Continuous	Real or nominal	Ordinal or Continuous	Real or nominal
Treasury	Ordinal or Continuous	Real or nominal	Ordinal or Continuous	Real or nominal
Sales	Ordinal or Continuous	Real or nominal	Ordinal or Continuous	Real or nominal
Part of the market	Ordinal or Continuous	Real or nominal	Ordinal or Continuous	Real or nominal
Profits	Ordinal or Continuous	Real or nominal	Ordinal or Continuous	Real or nominal
Profitability	Ordinal or Continuous	Real or nominal	Ordinal or Continuous	Real or nominal
Innovation	Ordinal or Continuous	Real or nominal	Ordinal or Continuous	Real or nominal
Expa activities.	Ordinal or Continuous	Real or nominal	Ordinal or Continuous	Real or nominal

**Table 2** Classification of objective measures a classification

Measures	Growth		Dynamics of SME growth		Threshold
	Past	Future	Name	Sign	
<b>Subjective</b>	-	-	Depression	<0	
	-	+	Reprise	=0	
	+	-	Recession	<0	
	+	+	Dynamism	>0	
<b>Objectives</b>	-	-	Depression	<0	Less than 0%
	-	+	Reprise	=0	Between 0 and 2%
	+	-	Recession	<0	
	+	+	Dynamism	>0	

**APPENDICES**

**APPENDICES A BAUMOL'S MODEL (1962)**

Baumol (1962) demonstrates that the dynamics of the growth of a firm (a growth rate  $g$ ) is an infinite geometric sequence which comes from the initial net income of a company  $R$ , from a capitalization of future revenues at the rate  $i$  of prices (which are constant). The convergence of the geometric series

$$\pi = P - C(g) = \sum_{t=0}^{\infty} R \left( \frac{1+g}{1+i} \right)^t = R \frac{1}{1 - \frac{1+g}{1+i}} = R \frac{1+i}{i-g} - C(g)$$

By maximizing profit, the entrepreneur seeks a maximum growth rate:

$$\pi_g = P' - C'(g) = R \frac{1+i}{(i-g)^2} - C'(g) = 0.$$

**APPENDICES B RUBIN'S MODEL (1973)**

Let  $b_i$  ( $i = 1, \dots, n$ ) is the initial holding of  $n$  existing resources of the firm, measured as a percentage of capacity,  $w_i$  is the cost per unit of new units (untreated),  $x_j^t$  ( $j = 1, \dots, m; t = 0, \dots, L$ ) is the level of  $m$  existing profitable activities in period  $t$  (all profitable activities lead to a single output that is sold)  $p$  is (constant) the unit profit earned from

only requires the condition that  $g < i$  so that  $(1 + g) / (1 + i) < 1$ . Assuming constant prices of all inputs and outputs of the firm, linear homogeneity of the production function, the net revenues will increase precisely in the same proportion as the inputs and the present value of the expected revenue stream, we get the profit growth function:

activity  $j$ ;  $b_i^{*t}$  is the amount of resource  $i$  produced at period  $t$  ( $b_i^{*t}$  perhaps less than the base of the activity at reproduction, it is an activity whose production is an additional unit of resource);  $L$  is the length of the planning period, which is the time horizon of the business, measured as a finite number of discrete time periods, and  $r$  is the interest rate.

So

$$b_i^t = f_i(x_1^t, \dots, x_m^t) + g_i(b_1^{*t}, \dots, b_n^{*t}),$$

That is to say, the quantity of the resource used depends on the levels of profitable activities and reproduction, where,  $f_i(x_1^t, \dots, x_m^t)$  is the quantity of resource  $i$  use to produce the outputs  $x_1, \dots, x_m$

in period  $t$  and  $g_i(b_1^{*t}, \dots, b_n^{*t})$  is the quantity of resource  $i$  used to produce the resources  $b_1, \dots, b_n$  available for use at period  $t+1$ .

$$Z = (PX^0 - WB^{*0}) + \frac{1}{1+r}(PX^1 - WB^{*0} - WB^{*1}) + \dots + \frac{1}{(1+r)^L}(PX^L - WB^{*1} - \dots - WB^{*L})$$

Under constraint

$$\begin{aligned} f_1(X^0) + g_1(B^{*0}) &\leq b_1, \\ f_n(X^0) + g_n(B^{*0}) &\leq b_n, \\ f_1(X^1) + g_n(B^{*1}) &\leq b_1 + b_1^{*0}, \\ f_n(X^1) + g_n(B^{*1}) &\leq b_n + b_n^{*0}, \\ f_1(X^L) + g_1(B^{*L}) &\leq b_1 + b_1^{*0} + b_1^{*1} + \dots + b_n^{*(L-1)}, \\ f_n(X^L) + g_n(B^{*L}) &\leq b_n + b_n^{*0} + b_n^{*1} + \dots + b_n^{*(L-1)}, \\ b_i^{*t}, x_i^t &\geq 0 \text{ pour tout } i, t \end{aligned}$$

The optimal value using Kuhn-Tucker conditions is given by:

$$\left(\frac{1}{1+r}\right)^T p_1 \leq \sum_{i=1}^n k_i^T \frac{\partial f_1}{\partial x_i^3}$$

#### APPENDICES C TRANSFORMATION, 1971

By imposing an integral transformation (see Van, 1971) we obtain a function of the dynamism of the growth of a resource by the following formula:

$$g_{it} = \int_{Z_j}^{Z_{j+1}} [U(z) - U(\bar{z}_i)]^2 dU(z)/\mu$$

And the function of the dynamism of the growth of the SME by:

$$G_{it} = \sum_{i=1}^n \int_{Z_j}^{Z_{j+1}} [U(z) - U(\bar{z}_i)]^2 dU(z)/\mu$$

$n$  exponential form in all resource constraints.

Where  $Z_j = -\infty$ ,  $Z_{j+1} = +\infty$  ( $\pm\infty$  are the lowest and highest growth levels respectively),  $U$  – fonction varying over the interval  $(Z_j, Z_{j+1})$ ,  $n$  number of resources,  $XCE_t$  the level of growth assumed to be a stationary flow over time. In a model which assumes that the entrepreneur pursues the objective of maximizing the dynamism of growth (which will not always be the case) of the SME, the rate of dynamism will come from the construction of Rubin's model (1973). whose objective function is  $G_{it}$  and the resource cost constraints will depend on the forms of the resource functions established in the theories which produce them. This problem becomes a dynamic optimization problem. We can impose a