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A change in the importance of mortality factors throughout the life cycle stages of small businesses

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Abstract

The aim of this paper is to describe the mortality factors and the change in the importance of these factors throughout the life cycle stages of small businesses. Research on mortality of small businesses ignores the characteristics of small businesses and the life cycle stage they are at the time of closure. A systematic mapping study was conducted to explore the literature on mortality factors in small businesses and understand the state of the art of the theme. The relevance of mortality factors distributed among three categories: owner-manager, business and environment have changed throughout businesses life cycle stages. Such variation states one of the main life cycle theory assumptions that a factor can have a beneficial influence during one specific stage and a negative influence during another stage. The attention given to the variation of importance of mortality factors during businesses life cycles results in implications for all those concerned in strengthening small businesses.

Keywords: Small business, Closure, Organizational life cycle stages, Mortality factors

Introduction

During the 1980 decade the idea that poorly organized social systems, which are included small businesses, were likely to disappear giving way to large organizations, to the modern State and to bureaucratic organizations in general ruled economic discussions (Motta and Bresser-Pereira 2004).

Despite the organizations social domain, small businesses did not disappear, in fact also gained some relevance. The social and economic relevance of small businesses is known and recognized worldwide (Barrett and Rainnie 2002; Blackburn and Kovalainen 2009; Bruce et al., 2009; Torres and Watson 2013; Stone, 2011). Their predominance reaches 95 % of all organizations in the world (Day, 2000). It is important to mention the great diversity existing within the category of small business; they differ widely in their structure, size, financial resources, access to external finance, management and learning style of the owner-manager, innovation performance and number of employees (Gupta et al. 2015; Pullen et al., 2012). The criteria for size classification varies from one country to another, although there is a common understanding for the sake of research: everything that is not a big corporation is considered as a small business; that is, any independent company with less than 500 employees, and which does not dominate the market (Dandridge 1979; SBA 2008).

Given the social-economic relevance of small businesses and their high rate of mortality several researchers have investigated the factors that contribute to the closure of those businesses, especially after the 1990 decade (see Table 1). The aim of these studies is to offer to the owners-managers the necessary knowledge for an efficient administration, and also help governments, as well as public and private institutions that work on strengthening the category of companies.

However, the systematization of the factors that determine the success and the closure of small businesses continue to be an unsatisfactory task (Rogoff et al. 2004) and lacks

Table 1 Bibliographic sources on SBs mortality factors and OLC

Decade	SBs mortality factor	OLC
1960	_	1. Steinmetz (1969)
1970	_	2. Greiner (1972)
1980	_	3. Galbraith (1982)
		4. Churchill and Lewis (1983)
		5. Quinn and Cameron (1983)
		6. Miller and Friesen (1984)
		7. O' Neill et al. (1987)
		8. Scott and Bruce (1987)
1990	1. Duchesneau and Gartner (1990)	9. Adizes (1990, 1997, 1998)
	2. Venkataraman et al. (1990)	10. Greiner (1998)
	3. Lussier (1996)	
	4. Everett and Watson (1998)	
	5. Zacharakis et al. (1999)	
2000	6. Fotopoulos and Louri (2000)	11. Helfat and Peteraf (2003)
	7. Frese et al. (2000)	
	8. Lussier and Pfeifer (2001)	
	9. Perry (2001)	
	10. Frese et al. (2002)	
	11. Stewart (2002)	
	12. Morrison et al. (2003)	
	13. Watson (2003)	
	14. Rogoff et al. (2004)	
	15. Walker and Brown (2004)	
	16. Bates (2005)	
	17. Machado and Espinha (2005)	
	18. Carter and Auken (2006)	
	19. Strotmann (2007)	
	20. Forsman (2008)	
	21. Ucbasaran et al. (2009)	
2010	22. Guerra and Teixeira (2010)	_
	23. Lussier and Halabi (2010)	
	24. Machado and Espinha (2010)	

refinement (Blackburn and Kovalainen 2009; Strotmann, 2007). There is not a universally accepted specification among the researchers about the factors involved in mortality. Many of them present their own explanations as to the reasons that lead to the closure of companies, with a low level of agreement among the academic community in the area, such as explored and discussed by Berkowitz and White (2004), Hall (1994) and Keeble and Walker (1994).

In addition to the lack of agreement regarding the mortality factors, research in the area ignores the typical characteristics or specificities of small businesses, as well as the life cycle stage at which the company is, that is, at time of closure.

For many years, it was thought that the management of a small business should be similar to that followed by the large ones. Thus, small businesses should follow the same principles of large corporations, but on a smaller scale, since it was believed that the small business would be a large one that had not yet grown, establishing the "little big business paradigm" (Welsh and White 1981). However, studies have shown that the small business requires a different way of dealing, since it is different from the big ones, having some characteristics that are unique to small businesses (Julien 1997; Torrès 2004; Torrès and Julien 2005).

Studies about the Organizational Life Cycle (OLC) aimed at identifying organizational and management differences according to the development stage at which the company is currently in, is an argument to differentiate the small from the big business, even when aware that not all studies focus on the first stages; that is, on the small businesses. Therefore, it is assumed that studies about the life cycle can clarify useful aspects for the management, until now little investigated, mainly those concerned with the mortality factors of small businesses. Headd and Kirchhoff (2009) emphasize this lack of studies on life cycle of business as not as a surprising fact considering the dearth of information by age and stage of small businesses.

Considering the presented context, the objective of this work is to describe the mortality factors and the change in the importance of these factors throughout the life cycle stages of small businesses.

This paper is a theoretical essay written based on the review, systemization and analysis of previously published material about the mortality of small businesses and the organizational life cycle. The systematic mapping study, based on Kitchenham's (2004) protocol, were used to obtain relevant material for discussion. Accordingly to the objective, this essay can be considered as having an exploratory and descriptive nature as the purpose is to gain knowledge about the topic making it clearer and providing new opportunities for research. It can be also seen as bibliographic research developed from material already published, mainly from journals.

In order to provide a better visualization of all presented information, which was taken from the literature review, we chose to draw up tables that systematize the researched subjects. Table 1 shows the initial sources consulted for the Small Businesses (SBs) mortality subject and sources for the Organizational Life Cycle subject (OLC), in chronological order by decades of publishing studies.

Additionally, the results from the systematic mapping study adds an important contribution to understand the relationship between SBs and OLS to achieve the objective of this essay.

Review

Knowing initial sources of previous studies on this essay's objective offers opportunity to better understand major aspects of the theme – what has been done so far. Nevertheless these studies do not show the state of the art. Therefore further investigation needs to be done – access new prospects for research. However, nowadays the challenging part for researchers are more on choosing the right articles that provides good data for supporting ones work more than find a considerable amount of articles (Elberzhager et al. 2012).

A systematic mapping study was conducted to explore the present literature about mortality factors in small businesses, identifying possible gaps in researches and obtain "a big picture" discussed in this essay.

A systematic review is a method that enables the evaluation and interpretation of accessible research relevant to a subject matter (Kitchenham et al. 2007).

Based on Kitchenham's protocol (Kitchenham 2004) two sets of search strings was designed using Boolean AND and OR on the Thomson Reuters Web of Science database: [(*small business* OR "*small business*" OR "*small compan**" OR "*small enterprise*?" OR "*small firm**" OR "*sme*?") AND ("failur*" OR "bankruptc*" or "exit*" OR "mortalit*" OR "dead" OR "death*" OR "clos*" OR "closure" OR "declin*")]. The search process, conducted on Thomson Reuters Web of Science, also combined refine tools of chosen database such as subject area (only business economics and operations research management science) and document types criteria (only articles).

After this first phase 61 articles were obtained. The second phase had two subphases: (i.) review of the articles to identify those with high relation with the aim of this essay and (ii.) analyze and interpretation of these articles in order to enhance the theoretical review to fulfil the objectives of this essay. Once concluded this second phase 15 articles were defined as high related to the objectives and became part of the literature review, such as Bates (2005), Gupta et al. (2015), Headd and Kirchhoff (2009) and Pullen et al. (2012). Further literatures were also included considering its relevance and importance for the construction of the theoretical review.

Mortality factors: an overview

Generally, the success and the closure of a business are studied simultaneously, since there are aspects that are related to the possibility of success and inversely to the failure (Machado and Espinha 2005). Therefore, the main objective was to identify sources about mortality of small businesses, although in many cases the source is linked to the success.

The term *failure* can carry different meanings: death, quitting, flop, bankruptcy, closure, insolvency or discontinuity of the business (Everett and Watson 1998; Machado and Espinha 2005; Sten 1998). This makes it difficult to find out the real reasons that lead the businessman to interrupt the business and/or the company's activities. The reasons behind the closure depend on the definition being used (Everett and Watson 1998; Watson and Everett 1996). This work is not aimed at identifying the differences on meaning for each case, but rather to analyse the failure factors as observed by the authors.

Collett et al. (2014), from a sample of Finnish SBs, recognize three important failures factors: poor management, high debt in adverse macro economy and adverse microeconomic environment.

Although Santini et al. (2015) identify eleven major factors causing mortality of small businesses, as a general rule, the factors that lead to mortality are within two general classifications. The first one specifies the internal and external factors and the second one the factors that are related to the owner-manager, to the business itself and to the environment (Bruderl et al. 1992; Machado and Espinha 2005; Rogoff et al. 2004; Sten 1998; Zacharakis et al. 1999).

In the first classification, the internal factors are those directly related to the owner: individual characteristics, managerial abilities, and so on. The external factors are those conditions or powers that are outside the businessman's control: economy, government regulations, and so on (Rogoff et al. 2004).

In the second classification, the factors related to the owner-manager, to the business itself and to the environment, correspond, respectively, to the personal factors (objective, ability, motivation), to the resources of the functional areas and to the conjectural forces (Machado and Espinha 2005). By observing the definitions it is possible to see that the internal factors correspond to those factors related to the business owner and the company, whereas the external ones are related to the environmental factors.

Chung (2009) and Harada (2007) shows the problems that Japanese SBs are facing due to the need for a better managerial behaviour of owner-manager and more capacity for adaptation to environmental changes. Therefore, this paper shows the mortality factors surveyed in the business management literature organized into three categories, according to the second classification mentioned above: owner-manager, business and environment. Within each category the ten most mentioned factors are organized in a crescent order according to the number of citations in the researched literature (Table 2).

The owner-manager category describes the personal factors related with the owner and that directly affect the occurrence of business mortality. The individual characteristics of the owner-manager, usually called entrepreneur or personal ones are the most widely studied by the authors in the consulted literature among all the factors related to the owner.

The mortality factors in the business category are related to the business' characteristics as well as to the way the resources are dealt with. The lack of a formal plan, as well as a lack and/or bad management of the functional area resources are the most

Table 2 Mortality factors in the categories: management, business and environment

Mortality factors in the owner-manager category	Mortality factors in the business category	Mortality factors in the environment category
Individual characteristics	Formal planning	Economic conditions
Previous experience in management and the business sector	Resources from the functional areas	Clients
Social links	Corporation composition	Business sector
Managerial abilities	Information management	Competitors
Education level	Size	Access to credit
Gender and age	Business' age	Professional advice
Values	Stage in the OLC	Localization
Voluntary decision	Organizational structure	Part of minority groups
Management background	Innovation capacity	Supplier
	Business type	Tributary Load

commonly mentioned and discussed factors in the surveyed literature as being the main factors for the closure of small businesses.

The mortality factors in the environment category are related to what occurs outside the business and therefore are outside the owner-manager's control. Within the environmental factors, the economic conditions are the most commonly cited one.

Organizational life cycle (OLC) development stages and their characteristics

During evolution, the businesses' characteristics vary throughout the life cycle stages: concerning the owner-manager's administration style, the organizational structure, the planning process, the operation and information technology, the functional areas of resource management and the business environment demands. Identifying the typical characteristics (specificities) of each stage helps to understand the impact of the mortality factors.

Table 3 presents a synthesis of the OLC stages. The synthesis was done by comparing the characteristics of each stage (structural, strategic and so on) studied by the authors listed in Table 1 – OLC column. Although the stages have different names, they do show similar characteristics, making it possible to re-group them and also give a new denomination according to the interpretation adopted by the authors and the aim of the paper.

From the stages (Table 3), other tables describing the characteristics of the initial stages, were made namely Tables 4, 5 and 6. The option was to characterize only the genesis (0), survival (1) and existence (2) stages, because these are characteristically stages of small businesses and those where high rates of mortality are concentrated. In a similar way to the mortality factors, the stages were characterized from three categories: owner-manager, business and environment. The owner-manager category describes the individual characteristics and the competences (know-hows, abilities and attitudes) required from the business' owner-manager. In the business category, the structure, planning process, technology, and the characteristics of the functional areas resources are described. The environment category refers to the forces from the environment that has an impact on the owner-manager's decisions.

Only three authors (Adizes 1997; Galbraith 1982; Helfat and Peteraf 2003) mentioned stage 0 (zero), also known as genesis. This stage corresponds to the preparations for starting the business. During this phase, the business is not yet constituted as a company, but rather represents an ambition of the entrepreneur with an idea of turning it into a business (Galbraith 1982), a possibility that would attend a demand from the market (Adizes 1997).

During stage 1, the existence stage, as it is known, the business starts its struggle looking to conquering consumers and producing results (Scott and Bruce 1987); looking for a niche market that is economically attractive (Quinn and Cameron 1983), trying to become viable (Miller and Friesen 1984). The owner-manager needs to produce, sell and deliver the product (Churchill and Lewis 1983; Galbraith 1982; Greiner 1998). It is a market test for the business idea; that is, whether the product being offered will satisfy or not a need from market.

In order to reach stage 2, the survival stage, the business needs to have shown that it is economically viable. It should have enough clients and they should be happy with the products being offered by the company (Churchill and Lewis 1983).

Table 3 Organizational life cycle stages

	Stages						
Author	Genesis (0)	Existence (1)	Survival (2)	Formalization (3)	Readaptation (4)	Stability (5)	Decline (6)
Adizes (1990, 1997, 1998)	Courtship	Infancy	Go go	Adolescence	Prime	Stable	Aristocracy Early bureaucracy Bureaucracy
Churchill and Lewis (1983)	_	Existence	Survival	Success	Take-off Resource Maturity	_	_
Galbraith (1982)	Initial test and prototype	Model Shop		Start-up Natural Growth	Strategic maneuver	_	_
Greiner (1972, 1998)	_	Creativity		Direction	Delegation Coordination	Collaboration	_
Helfat and Peteraf (2003)	Foundation Development Maturity	Foundation Development Maturity		Foundation Development Maturity		Foundation Development Maturity	_
Miller and Friesen (1984)	_	Birth		GrowthMaturity	Renovation	_	Decline
O' Neill et al. (1987)	_	Entrepreneur	Post- entrepreneur	Post-entrepreneur	Corporative		_
Quinn and Cameron (1983)	_	Entrepreneur	Collectivity	Formalization and control	Development of structure	_	_
Scott and Bruce (1987)	_	Start-up	Survival	GrowthExpansion	Maturity	_	_
Steinmetz (1969)	_	Direct supervision	Supervision of supervisors	Indirect control	Divisional organization	_	_

Table 4 Characteristics of the OLC's initial stages in the owner-manager category

Stage	Owner-manager category
Genesis	▪ Many ideas and questions from the owner (9)
	▪ Does a bit of everything (3)
	▪ Social (social links), human (abilities) and knowledge capital (11)
	▪ Organizes and directs (attack commander) (3)
Existence	▪ Dependency from the founder: the owner is the business (main supplier of energy, direction and capital) (4; 6; 7; 9)
	▪ Unlimited dedication: many hours of work dedicated by the owner (2; 9)
	▪ Individualist and entrepreneur style (2; 5; 7; 8)
	▪ Social, human and knowledge capital (11)
	▪ Abilities to buy (1) and to make and sell (2; 4)
	▪ Expectation of low salary and promise of property (2)
	▪ The business is led by the founder's values: balance between personal and business' aims (4; 8)
	▪ Emphasis on the individual charisma (1)
	▪ The owner is more of a player and less of a trainer (3)
Survival	▪ Has a sense of mission (5)
	▪ The owner continues to be a synonym of the business (4; 6)
	▪ Entrepreneur and managerial style (1; 4; 8)
	▪ Social, human and knowledge capital (11)
	▪ The owner-manager plays the roles of a player and a trainer (3)
	▪ Expectation of salary increase (2)
	▪ Know-how in finances and efficiency (performance standards) (1; 2)
	▪ More adept to financial management (1)
	▪ Develops an innovation (method, product) (1)

It is at this phase that the cash flow will stop being negative and break-even will be reached (Churchill and Lewis 1983; Scott and Bruce 1987).

During the survival stage, the company can grow in size and profit, moving into the next stage, or the owner might choose to remain at this stage, receiving some income without investing large amounts of time or capital (Churchill and Lewis 1983).

Results and discussions

Table 7 identifies the relevance of some of the mortality factors shown in Table 2 for stages zero, 1 and 2 (genesis, existence and survival). The mortality factors are distributed thorughout the stages based on the stages characteristics according to Table 4, 5 and 6.

By relating the mortality factors to the life cycle stages, it can be observed that there is a change of importance in the factors throughout the businesses stages, shown in Table 7. There is not a comparison among the factors, but rather a comparison of the factor's importance among the OLC stages.

In the owner-manager category, six out of the ten mortality factors identified in the literature show a more evident link with the OLC stages characteristics: individual characteristics, experience in management and the sector, managerial abilities, social links, managerial background and values. The remaining factors from Table 2 do not present a clear relation with the stages and were not, therefore, taken into consideration.

Table 5 OLC's initial stage characteristics in the business category

Stage	Business category
Genesis	▪ Informal structure and process (face-to-face contact) (3)
	▪ People do a little bit of everything (3)
	▪ Business abilities development (11)
	▪ Rewards: equality feeling, non bureaucratic environment and building up a brand (3)
	▪ Personal Control (3)
Existence	▪ Authority based on the property right (1)
	▪ Centrally-controlled decisions (6; 9)
	▪ Informal structure: face-to-face contact (2; 5; 6; 9) and organization around people rather than tasks (mainly on the founder's) (9)
	▪ Direct supervision (eye-to-eye control (3; 4; 8)
	▪ People do a little bit of everything (3), cooperating and engaging (5)
	▪ Communication through meetings (3)
	▪ Rewards: informal environment; factory-based promotions (3)
	▪ Few policies, systems, budgets or processes (9) of decision making (6)
	▪ Formal systems extension: minimal or inexistent (4; 6)
	▪ Product line innovation (5; 6)
	▪ Predominance of informal planning (4; 5; 7; 8)
Survival	▪ Simple (4; 8) and centralized (2; 3; 6) functional structure
	▪ Supervision of supervisors: beginning of hierarchy (4; 8)
	▪ More informal and less impersonal communication (2)
	▪ Rewards: low-bureaucracy environment: factory-based promotion (3)
	▪ Low-level of training, performance evaluation or salary system (9)
	▪ Extension of formal decision making systems: minimal (4; 6)
	▪ Continuity on product innovation (5; 6)
	▪ Less intuitive planning: budget (7)
	▪ Business abilities development (11)
	▪ Niche strategy (6)

Regarding the individual characteristics, it is observed that most of them are relevant during the three stages: taking risks, creativity, dedication, availability, initiative, and persistence. In order to run a business it is necessary to take risks, the owner-manager is, above all, the business' main provider of capital.

Creativity is the starting point for innovation and is an essential ability throughout the three stages, since the company needs to be in continuous innovation. However, according to Adizes (1997), it is during the business' conceptual stage that the owner-manager needs to be more creative and have more ideas in order to clarify his/her own questions as to how to take advantage from a given market opportunity: What to do? Why to do it? When and how to do it? And, finally, decide who is going to make the product that will attend the market's demand.

The owner-manager represents the core of the business, the main supplier of energy, direction and capital for the company (Adizes 1997; Churchill and Lewis 1983), requiring from him/her unlimited dedication (Adizes 1997; Greiner 1998), mainly during the first two stages. During the third stage, the dedication tends to be more moderate, with other people arriving to "help the owner-manager carry the weight". The availability

Table 6 OLC initial stage characteristics in the environment category

Stage	Environment category
Genesis	▪ No characteristics
Existence	▪ Homogeneous and quiet environment (6)
	▪ Industrial stage (8)
	▪ Limited market and channels (8)
	▪ Dependency on clients and suppliers (4)
Survival	▪ Homogeneous and quiet environment (6)
	▪ Industrial stage (8)
	▪ Limited market
	▪ Increase in the number of channels (8)
	▪ New entries (8)
	▪ Dependency on clients and suppliers (4)

factor for the hard work shows a behaviour that is similar to the dedication one. During stages zero and 1, the company is heavily dependent on the owner-manager, demanding from him/her the availability to carry out any kind of task.

The owner's initiative is another factor that can contribute to the business's success. The owner needs to be proactive through all the business periods, from the discovery of new opportunities to the surveillance of the competitors, among other environment forces. Finally, the persistency factor is an essential one in order to reach the aims. The owner should have a "sense of mission" (Quinn and Cameron 1983) and keep engaged with the objectives that he/she established during the three stages of the small business.

Therefore, it could be said that the owner-manager's individual characteristics is a mortality factors that can be decisive during the three initial stages, becoming less relevant during the following stages when the business initiates its formalization, refines its structure and professionalizes its managerial body.

Previous experience in management and the business sector can help the owner-manager recognize and solve problems already experienced by him/her in previous situations. The experience gains relevance throughout the OLC, when the company becomes increasingly more complex. Helfat and Peteraf (2003) observed the importance of previous experience during the development of abilities in order to create competitive advantage for the business. According to those authors, experience represents the owner's human capital, and human capital has a direct influence on the owner and his/her team's choices.

Managerial abilities (technical, human and conceptual) are influential during the three stages. As the owner-manager plays the role of the main actor, he/she will need the three abilities simultaneously. However, the owner-manager's technical abilities for producing, buying and selling are the ones that give life to the business and are essential during the existence stage (Churchill and Lewis 1983). As the business grows and new people arrive to take part in it, the owner-manager will be more required from the human and conceptual abilities. Whereas during stage zero he/she is the commander attacking, during stage 1 he/she plays more the role of a player and less of a trainer, and during stage 3, a better balance is achieved between the two roles (Galbraith 1982).

The social links represent the owner's contacts that allow him/her to obtain resources and know-how. Weak links represent the owner's contacts with clients and suppliers

Table 7 Importance of mortality factors considering the life cycle stages

Category	Factors			Life cycle stages		
				Genesis (0)	Existence (1)	Survival (2)
Owner-manager (Adizes 1997; Churchill and Lewis 1983)	Individual characteristics	Take risks		High	High	Medium
		Creativity		High	Medium	Medium
		Dedication		High	High	Medium
		Availability		High	High	Medium
		Initiative		High	High	High
		Persistence		High	High	High
	Previous experience in management and the sector			Low	Medium	High
	Managerial abilities	Technical		High	High	Medium
		Human		Low	Medium	Medium
		Conceptual		Low	Low	Medium
	Social links	Weak		High	High	High
		Strong		Medium	Low	Low
	Managerial know-how			Low	Medium	High
	Starting-up motivation			High	High	High
	Values			High	High	High
Business (Miller and Friesen 1984; O' Neill et al. 1987; Quinn and Cameron 1983; Scott and Bruce, 1987 Steinmetz, 1969)	Planning	Formal strategy		Low	Low	Low
		Informal strategy		High	High	High
		Formal Operational		Low	Medium	High
		Informal Operational		High	Medium	Low
	Functional area resources	Financing		High	High	High
		Marketing		High	High	High
		Human Resources		High	High	High
		Production		High	High	High
	Technology	Processes	Formal	Low	Low	Low
			Informal	High	High	Medium
		Innovation		High	High	High
	Organizational structure	Specialization		Low	Low	Medium
		Centralization		High	High	Medium
		Personal Communication		High	High	Medium
		Hierarchy		Low	Low	Medium
Environment (Chung, 2009; Galbraith, 1982; Greiner 1998; Harada, 2007)	Clients			High	High	High
	Competitors			Low	Low	High
	Supplier			High	High	High
	Business Sector (Industry)			Medium	High	Low

and are essential during the three stages. These results were observed during studies conducted by Duchesneau and Gartner (1990) and Vale and Guimarães (2010). The strong links, representing contacts with friends and relatives are more important during the decision of starting-up the business than during the performance after operations begun (Vale and De O Guimarães 2010). Thus, weak links are more important for the small business' survival than strong links are, although the family also helps providing some capital in the business' start-up. The social links inside and outside the company are important for developing the managerial abilities that will provide competitive advantage (Helfat and Peteraf 2003).

Managerial knowledge becomes increasingly more important throughout the OLC and gains the highest relevance during the survival stage (2), mainly because the owner-manager needs to decide between increasing the business size or keeping it at its current size. During the two first stages (0 and 1), the amount of resources is still low and an owner-manager's personal control can be enough and efficient. However, as the business evolves, it becomes more complex, demanding the owner-manager to acquire new abilities on finances, performance standards and efficient mobilization of the available resources, among other ones (Greiner 1998; Steinmetz 1969). The development of organizational competence will also depend on the owner-manager and his/her team's know-how.

Although the reason for starting the business was not mentioned in Table 2, the consulted literature on OLC mentions its importance starting from the genesis stage. The owner could, for example, have started the business with the idea of becoming a millionaire, or to run his own business, or to be autonomous, or simply as an opportunity to try an idea (Galbraith, 1982). The reason for starting a business is associated to a need or motivation from the owner, but the market's satisfaction is essential for its survival, an opportunity needs to be identified and satisfied, regardless of the reason that motivated it to start. In order to avoid the failure, the owner-manager's decision must be guided by the identified opportunity, regardless of the life cycle stage. For this reason, the importance level is similar during the three stages.

The owner's values can also contribute to the business closure during the three initial stages of the OLC. The company is guided by those values (Scott and Bruce 1987) and the balance between the personal and business aims is essential for its success (Churchill and Lewis 1983). During the existence stage, for example, the owner should expect a modest salary (Greiner 1998), since a conflict between the owner's aims and those of the company might lead the business to its closure. Therefore, as the company should be an extension of its owner's values, the level of importance between one stage and another is similar.

In the business category, only five mortality factors are more clearly related to the characteristics of the businesses throughout the OLC stages: formal planning, functional areas resources, information management, innovation capacity and organizational structure. The remaining factors from Table 2 were disregarded due to a lack of evidence.

A lack of formal planning was the most commonly cited factor in the literature as the contributor with the small businesses mortality, despite studies about the initial stages of the OLC not proving the relation between lack of formal planning and the closure of small businesses (Churchill and Lewis 1983; O' Neill et al. 1987; Quinn and Cameron 1983; Scott and Bruce 1987).

During the genesis stage (0) no citation was found regarding formal planning. The processes are informal ones; seeking for information, the choice and implementation of the strategy does not follow a pre-defined script. Thus, it is not possible to assert that the development of a business plan before the business starts represents a decisive factor for the survival of the small businesses.

The first signs of formal planning will appear in stage 1. However, during that phase of the life cycle, it is the owner-manager who is the main means of direction and coordination for the business rather than the plan that results from a formalized and structured planning process, as usually happens in large organizations.

During stage 2 the budget plan is drawn up as a result of the formalized operational planning (O' Neill et al. 1987). The budget improves the control and increases the efficiency for applying the scarce resources available to the business. Above all, its elaboration does not require too much time and does not diminish the company's flexibility necessary to react to the environment's demands. During this stage, strategic planning is mainly in the owner-manager's mind, which continues to define the direction the company should follow, as well as coordinating the resources.

It can be said that the formal planning (strategic or operational) is not a mortality factor that is determinant during stages 0 and 1. It is only from stage 2, when the owner-manager will need to decide for the growing or improvement of the business profits, that the formal planning, in the form of budget, has its importance recognized. "Formal planning is, at its best hypothesis, the foreseen money" (Churchill and Lewis 1983).

The influence of the factors related to the functional areas resources occurs during the three stages of the OLC analyzed by this work. Since this work is not meant to compare which functional resource is more important and also as the functional activities are interconnected and interdependent, the four kinds of factors related to the functional areas during the three initial stages of the OLC were classified as being of fundamental relevance, namely: finances, marketing, human resources and production. However, only the importance of the human resources was mentioned for stage zero (Galbraith 1982).

The financial resources have a great influence on the existence (1) and survival (2) stages of the small businesses life cycle. During stage 1, the financial factors that can contribute to the business closure are: scarce financial resources (Adizes 1997; Steinmetz 1969), the generation of negative flow, high investments in industrial plant and equipment and the scarcity of credit sources, limited, mainly, to the owner, relatives, friends and suppliers (Scott and Bruce 1987).

During stage 2, when the business has proved to be viable, the financial situation starts to reach a balance (Churchill and Lewis 1983; Scott and Bruce 1987) and can contribute to the emergence of a new source of credit, the bank institutions. However, the returns still continue to be at a marginal level (Scott and Bruce 1987).

Regarding the factor related to the marketing area, the authors highlight two points: the nature of the product and the distribution strategy. In order to be successful, the business needs to follow a simple (single) line of product during phases 1 and 2 of the life cycle (Scott and Bruce 1987; Steinmetz 1969). During those phases the business does not have enough resources for a second line of products and is still testing (phase 1) or consolidating the initial product line (phase 2). During those stages, the businesses usually use the services of intermediates for the commercialization of products, mainly, to save money on distribution. The businesses are not able to configure their own distribution channels (Miller and Friesen 1984).

Human resources are essential and usually present similar characteristics during the three initial stages (0, 1 and 2). The individuals that can contribute to the success of the small business are generalists and are attracted by the following rewards: equality, non bureaucratic environment and the possibility of building a new brand Galbraith 1982). They also expect modest salaries at the beginning and a progression in their salaries, and their careers, as the business develops. During the survival stage, the business can also be influenced in a negative way by the low quantity of training and by the lack of the employee's performance evaluation.

No direct citation was found in the literature from the authors that study the OLC, regarding the aspects of the production area, namely: primitive stock control, slow products development, product design, and low quality of products, among other factors. However, the development of a simple product line has direct implications on the production activities. In the same way, the possibility of developing a business competence related to the production area, which could contribute for the small business survival.

The technology factor highlighted by the authors includes the decision making processes and the information management, as well as the business' innovation capacity. The decision making process does not appear in Table 3. Nor do the authors, who studied the OLC, mention any technological factors related with machinery and equipment.

The decision making processes and information management are informal during the initial stages of the OLC and minimal (Churchill and Lewis 1983; Miller and Friesen 1984), or even too simple during the survival stage. The owner-manager decisions are more intuitive than analytical. Some authors observe that the number of factors and opinions taken into consideration is small (Miller and Friesen 1984).

Therefore, in a way similar to the decision making process, the information process occurs, predominantly, in an informal manner during the initial stages of the OLC. There is not a pre-defined process that defines the stages of the information management, which will feed the decision process. The formalization of the process only occurs during the evolution of the business throughout the life cycle.

The owner-'s innovation capacity, followed afterwards by that of the business', is highlighted in the literature from stage zero. The initial idea needs to be innovative and can become a market opportunity. The innovation also plays an important role during the survival stage, since keeping the business at that stage with attractive returns or with an intention of growth from the owner-manager demands some kind of innovation on the product (asset or service) being offered, at the operational level or at the client relationship in order for the business to become successful. Usually, the business is more proactive, daring and courageous than older competitors, in the attempt to conceive new products and practices (Miller and Friesen 1984).

Moving from one stage to the other also causes significant changes in the organizational structure: in the task division, the authority distribution and the ways of communication. During the genesis stage (Galbraith 1982) and during the existence one, the structure is informal (Adizes 1997; Greiner 1998; Quinn and Cameron 1983). During those stages, the organization works around individuals rather than around tasks, decisions are concentrated on the owner-manager, communication follows a face-to-face pattern and is also meeting-based and the involved individuals do a little of everything showing cooperation and engagement. The business is dominated by the founder who acts with owner's prerogative (Miller and Friesen 1984).

During stage 1, supervision is direct and during stage 2, hierarchy is initiated, with the owner-manager coordinating the supervisors' activities (Churchill and Lewis 1983; Scott and Bruce 1987); the business grew and the owner-manager needs to share some tasks, as he/she is unable to solve all problems alone. From stage 2, control increases, and is exercised by the owner, by the market and by the formal processes which start to appear, even timidly, during this stage of the life cycle. As observed by Galbraith (1982), inadequate structure represents one of the main problems that lead to the closure of businesses. In most cases, the owner-manager is not prepared or does not wish to have the organizational structure redesigned.

In the environment category, four factors out of the ten most mentioned ones in the literature (Table 2), show a more evident relation with the typical characteristics of the small businesses during the OLC stages: clients, concurrence, business sector and suppliers. The remaining ones were disconsidered since they do not show a clear relation.

Clients influence the three initial stages of the OLC. During stage zero, the business needs to identify a market niche, potentially profitable in the short and long term. During stages 1 and 2, the small business is strongly dependent on its clients (Churchill and Lewis 1983). Losing one of them may bring serious consequences to the business. If the company has a large portion of the income linked to a few clients, the closure risk is even higher.

In a way similar to what occurs with the clients, the small business is highly dependent on the suppliers during stage 1 and 2 of the OLC (Churchill and Lewis 1983). In the case where the supplier is a large corporation, commercial relations tend to be a more asymmetric. During these stages, the supplier also plays the role of financial creditor for the small business. During the last stages of the organizational life cycle, the loss of an important client or supplier is more easily compensated (Churchill and Lewis 1983).

Competitors gain relevance in the success or closure of the small business during stage 2, when the company has already shown to be potentially viable. The level of competition is still uncertain but quite probably new incomers will be attracted to the industry. All will depend on the existing barrier's level. The new competitors may emphasize the prices rather than the differentiation. If the company chooses to keep prices at a low level, scale economies will become necessary, and as a consequence more financial resources will be demanded in order to modernize the industrial facilities (Scott and Bruce 1987) and lead the business to success.

The influence of the business sector is related to the entrance's barriers as well as to the industry evolution's stage that will have influence on the business' performance. The importance of the sector is higher during the product testing phase (stage 1) and lower during stage 2, when the business has already demonstrated to be viable and has its product accepted by the clients (Galbraith 1982; Greiner 1998).

Conclusions

The relevance of the mortality factors in the owner-manager, business and environment categories varies throughout the stages of the small business' life cycle. The factors acquire a different relevance in the closure when typical characteristics of the small business during the initial OLC stages are taken into consideration. Such variation of importance reinforces one of the life cycle theory assumptions: a factor can have a beneficial influence during a specific stage and a negative one during another stage.

In the owner-manager category, the individual characteristics, the technical abilities, the weak social links, the motivation for the business starting and the owner's values, are essential during the life cycle stages, and will have an impact on the owner-manager's life and business' project. The growth demands new know-hows and abilities and requires changes on the organizational structure, increasingly moving the owner-manager away from the operational activities.

Although the motivation for opening the business is not mentioned by the authors who investigate the subject of small businesses' mortality factors, articles focused on the OLC show that it is a relevant factor starting from the genesis stage.

Despite the fact that within the business category, formal planning has been the most mentioned factor in the relevant literature as a contributor for the small businesses' mortality, studies about the stages do not prove that there is a relation between the lack of formal planning and the closure of small businesses during the two initial stages.

In the environment category, only four factors presented a more relevant relation with the typical characteristics of the small businesses during the OLC stages: clients, competitors, business sector and suppliers. However, none of the factors linked to the environment are mentioned to have a relation with the genesis stage.

Despite the fact that the economic conditions factor had been the most frequently mentioned in the environment category by the researchers of the small businesses mortality topic, there is not any evidence as to its importance in studies of the organizational life cycle subject.

It was not possible to associate all mortality factors mentioned by the researchers in the small business subject (Table 2) to the OLC stages. No theoretical evidence was found that would allow this association, mainly, when the environment category factors are concerned. These results will be refined using empirical evidence from ongoing research.

The discovery of changes in the importance of the mortality factors during the businesses life cycle results in implications to those involved in drawing up policies to support the survival, strengthening and growth of small businesses, as well as for the training centers of entrepreneurship and management of small businesses.

Many training programs aimed at future entrepreneurs teach what is typical for large corporations while neglect what is essential. During the initial stages of the life cycle it is more relevant for the owner-manager to have the abilities that would enable him/her to find out new opportunities, do, buy and sell a product than to know how to step-by-step structure a formal strategy plan.

Competing interests
A.F.A., E.E.F. and M.S.N. prepared the background. A.F.A., E.E.F. and M.S.N. designed the methods. A.F.A., E.E.F., M.S.N. and L.A.P.J. carried out analysis of results and discussion. M.S.N. and L.A.P.J. prepared the conclusions and the manuscript. A.F.A., E.E.F., M.S.N. and L.A.P.J. give final approval of the version to be submitted and any revised version. The authors declare that they have no competing interests.

Authors' contributions
AFA, EEF, MSN and LAPJ designed this study, analyzed the data, and wrote the paper. The authors declare that all authors have read and approved the final manuscript.

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