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**THE CONTRIBUTION OF ORGANIZATIONAL LIFE CYCLE THEORIES FOR  
MANAGEMENT ACCOUNTING RESEARCH**

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## 1. INTRODUCTION

The life cycle concept was first developed in the biophysiological science field and has been widely applied in other areas, mainly in social sciences for its adaptation to the issues concerning the development and growth of civilizations, cultures, languages, among other (KIMBERLEY, 1987; HANKS & CHANDLER 1994; MILLER & FRIESEN, 1984; QUINN & CAMERON, 1983). These studies aim to identify and correlate an evolutionary logics and specific changes attributes that characterize particular unit analysis at a given time.

Chandler (1962) was considered a pioneer in view of the configuration and is also recognized as one of the forerunners of the life cycle theory by discussing the organizations structure changes in relation to business strategy changes. In this case, the organizational effectiveness is not achieved when there is one and only organizational model that has the characteristics of the strategic dimension of the organizations, which are significantly different.

Within this perspective, Otley (1980, p.413) argues that there is not a universally appropriate accounting system because, as organizations evolve, the complexity of the environment, administrative tasks and approaches in the literature increase. The studies address the organization life cycle theories emphasizing that growth is seen as a key strategic variable of the organizations that are facing several structural and procedural changes over time, characterizing the different life cycles stages (MILLER & FRIESEN, 1984).

Although there are several prominent authors in the field of models and theories that address organizational life cycle, there are still few researches that emphasize the influence of managerial accounting systems in the organizations life cycle and how their use may be demanded among the different phases of organizational life cycle stages (KALLUNKI & SILVOLA, 2008). Thus, the studies have been employed in a fragmented way and little systematic in managerial accounting research was conducted (OTLEY, 1980). Moreover, few

empirical studies report the importance of life cycle in the emergence of management control systems (MOORE & YUEN, 2001; DAVILA, 2005; AUZAIR & LANGFIELD-SMITH, 2005, GRANLUND & TAIPALEENM, 2005) emphasizing the importance of choosing an appropriate life cycle model to identify different configurations.

Thus, the researches related with configurations of the organizations life cycle have helped to understand how patterns of strategy, structure, leadership and decision-making vary according to the evolutionary stages of organizations (MILLER & FRIESEN, 1984). Being managerial accounting of the organization design, it is also expected to be influenced by aspects of organizational life cycle stages. Whereas the internal settings vary with the characteristics of each life stage, one can examine the internally consistent relationship for each of the distinct patterns of managerial accounting systems and the implications of this relationship in organizational effectiveness (MOORE & YUEN, 2001). In this context, to guide the conduct of the study, the following research questions are designated: What kind of contribution to life cycle theories can be brought to managerial accounting research? What are the highlights of life cycle research in the world (countries and names)?

Aiming to contribute to the understanding of how organizational life cycle theories contribute to management accounting research in an international context, this study conducts a Bibliometric analysis from ProQuest®'database. A research and a literature review are developed, in which reference organizational life cycle conceptual models are sought and the major studies in the management accounting area involving the concept of organizational life cycle are retrieved in order to assess the potential contribution of this approach for understanding managerial accounting research in enterprises. Moreover, from a citations analysis in articles in the managerial accounting international area, this study aims to survey the main outstanding points (authors and works) of the organizational life cycle theoretical field at the institutions and countries in which the researches are carried out.

The article was structured into five parts, including the introduction. The second part is the literature review, presenting the main organizational life cycles types and aspects related to concepts and topics on managerial accounting research. Then, the methodology structure study is exposed. In the fourth section, the results are presented and analyzed. In the fifth and last section, the considerations are exposed end of authors, the research limitations and recommendations for future works.

## **2. LITERATURE REVIEW**

### **2.1. Organizational life cycle models**

The life cycle models characterize phases or stages during the organizations development in which there are distinct organizational characteristics patterns, including strategy, structure, leadership styles and decision-making (MILLER & FRIESEN, 1983, 1984). The arrangement of an internal standard consisting of such organizational characteristics can lead to organization performance improvement (VAN DE VEN & DRAZIN, 1985). The life cycle models are derived from the configuration approach that, according to Miller (1986, 1987 and 1996), can be defined as the degree by which organizational elements are orchestrated and connected by a single theme. Also known as 'archetypal 'or 'generic type', the concept of configuration was developed from typologies and taxonomies generated by organizational studies, especially the study performed by Chandler (1962).

Besides being considered one of the configuration perspective pioneers, the study developed by Chandler (1962) is also recognized as the basis of life cycle theory (MINTZBERG, AHLSTRAND & LAMPEL, 2000). This study was conducted from a survey used to investigate the growth and the existing administrative structure in American large companies until the 1960s. Chandler (1962) discusses four companies in depth: Du Pont, General Motors, Standard Oil and Sears. Based on case studies, Chandler (1962) performed comparative analysis between the four major U.S. companies in relation to "organizational

innovation". It is worth noting that the author focuses on industrial companies, not considering financial and transport companies, for example.

From a historical analysis, Chandler (1962) concludes that the American companies' executive administration has followed an identifiable pattern of resources acquisition and use. At the end of the book, the author summarizes what he called phases or chapters of the American great industrial corporation history until the early 1960s. Figure 1 outlines the classification given by the author:

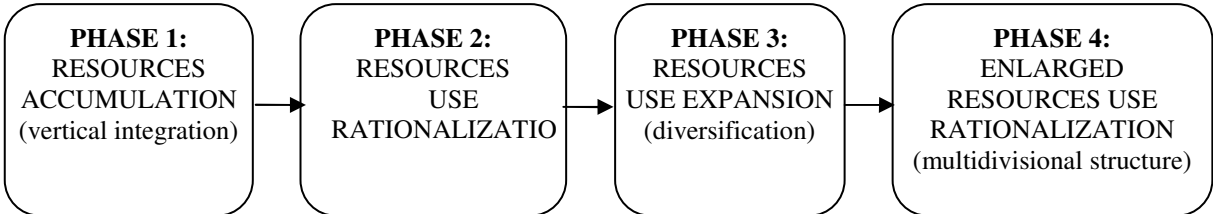


Figure 1: Phases of the history of the great industrial corporations of the United States  
Source: adapted from Chandler (1962)

After Chandler's (1962) seminal work, recognized as a "classic" by Miller (1986, p. 233) and validated by other authors (e.g. Channon, 1973; RUMELT, 1974), several life cycle models, also called life cycle theories (e.g. Moore & YUEN, 2001), were proposed. Quinn & Cameron (1983) made a compilation of nine existing life cycle models until the end of the 1970s and created a type called life cycle "summary model". It should be stressed that the summary model does not take into account stages of organizations decline, because few studies were carried about by them. The summary model is presented in Table 1:

<b>QUINN &amp; CAMERON (1983): SUMMARY MODEL</b>			
<b>ENTREPRENEURIAL STAGE</b>	<b>COLLECTIVITY STAGE</b>	<b>FORMALIZATION AND CONTROL STAGE</b>	<b>ELABORATION AND STRUCTURE STAGE</b>
<ul style="list-style-type: none"> <li>• Marshalling resources</li> <li>• Lots of ideas</li> <li>• Entrepreneurial activities</li> <li>• Little planning and coordination</li> <li>• Formation of a "niche"</li> <li>• "Prime mover" has power</li> </ul>	<ul style="list-style-type: none"> <li>• Informal communication and structure</li> <li>• Sense of collectivity</li> <li>• Long hours spent</li> <li>• Sense of mission</li> <li>• Innovation continues</li> <li>• High commitment</li> </ul>	<ul style="list-style-type: none"> <li>• Formalization of rules</li> <li>• Stable structures</li> <li>• Emphasis on efficiency and maintenance</li> <li>• Conservatism</li> <li>• Institutionalized procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Elaboration of structures</li> <li>• Decentralization</li> <li>• Domain expansion</li> <li>• Adaptation</li> <li>• renewal</li> </ul>

Table 1: Model life cycle summary  
 Source: Quinn & Cameron (1983, p. 35)

The 1980s were also marked by the emergence of various life cycle typologies beyond the one proposed by Quinn & Cameron (1983). Among the various models of life cycle stages proposed, one developed by Miller & Friesen (1983, 1984) stands out not only by its conceptual depth, but also by empirical tests carried out (NECYK, 2008) and the consideration of an organizational decline phase. The study performed by Miller & Friesen (1984) aimed to establish a typology that could be used to predict differences between organizational and environmental characteristics in different organizational development stages. These characteristics included: environmental situation, structure, decision making style/methods and strategy. The study justification was based on the lack of longitudinal studies that evidenced the evolutionary sequence between life cycle stages. Until then, the studies were cross-sectional, identifying static characteristics of different organizations in different life cycle stages, in a same historic moment. Miller & Friesen (1983, 1984) defined five development stages, the characteristics of which are presented and discussed in Table 2:

<p><b>BIRTH PHASE:</b> the organization is characterized by a simple and centralized structure. There are few formal controls and information systems. The organization is dominated by the founder, who concentrates the decisions, refraining from a specialist staff. An intuitive style of decision prevails in place of an analytical model. Projects are not detailed or alternatives considered. Few opinions are taken into account for making an important decision.</p>		
<p><b><u>SITUATION / ENVIRONMENT</u></b></p>	<p><b><u>ORGANIZATION</u></b></p>	<p><b><u>INNOVATION AND STRATEGY</u></b></p>
<ul style="list-style-type: none"> <li>•Small firm</li> <li>•Young</li> <li>•Dominated by owner-manager</li> <li>•Homogeneous, placid environment</li> </ul>	<ul style="list-style-type: none"> <li>•Informal structure</li> <li>•Undifferentiated</li> <li>•Power highly centralized</li> <li>•Crude information processing and decision-making methods</li> </ul>	<ul style="list-style-type: none"> <li>•Considerable innovation in product lines</li> <li>•Niche strategy</li> <li>•Substantial risk taking</li> </ul>
<p><b>GROWTH PHASE:</b> the organization product line is expanded and markets are treated as segments. The structure becomes more specialized and the routine administrative owner influence decreases. Greater effort is spent in collecting and processing information about the competitive environment (monitoring), to control the financial performance of various products and to facilitate communication and coordination between various departments. The degree of decisions boldness is still present, yet reduced, since more managers are involved in decision-making, reducing the appetite for risk and pro-activity. Decisions tend to be more analytical, less dependent on the owner's guessing and more focused on discussions between the managers.</p>		
<p><b><u>SITUATION / ENVIRONMENT</u></b></p>	<p><b><u>ORGANIZATION</u></b></p>	<p><b><u>INNOVATION AND STRATEGY</u></b></p>
<ul style="list-style-type: none"> <li>•Medium sized</li> <li>•Older</li> </ul>	<ul style="list-style-type: none"> <li>•Some formalization of structure</li> <li>•Functional basis of organization</li> <li>•Moderate differentiation</li> </ul>	<ul style="list-style-type: none"> <li>•Broadening of product-market scope into closely related areas</li> </ul>

<ul style="list-style-type: none"> <li>•Multiple shareholders</li> <li>•More heterogeneous and competitive environment</li> </ul>	<ul style="list-style-type: none"> <li>•Somewhat less centralized</li> <li>•Initial development of formal information processing and decision-making methods</li> </ul>	<ul style="list-style-type: none"> <li>•Incremental innovation in product lines</li> <li>•Rapid growth</li> </ul>
<p><b>MATURITY PHASE:</b> the organization is characterized by a decrease in the degree of innovation. Moreover, political arrangements are pursued to maintain environment stability and the goal is to improve the operations efficiency and profitability. The structure is more professional and the founder has probably been already removed. There is greater emphasis on formality of controls, budgets and performance indicators. The decision style is more conservative, less inclined to take risks and innovations. The level of analysis is similar to that of the previous phase.</p>		
<p style="text-align: center;"><b><u>SITUATION / ENVIRONMENT</u></b></p> <ul style="list-style-type: none"> <li>•Larger</li> <li>•Still older</li> <li>•Dispersed ownership</li> <li>•Competitive and still more heterogeneous environment</li> </ul>	<p style="text-align: center;"><b><u>ORGANIZATION</u></b></p> <ul style="list-style-type: none"> <li>•Formal, bureaucratic structure</li> <li>•Functional basis of organization</li> <li>•Moderate differentiation</li> <li>•Moderate centralization</li> <li>•Information processing and decision-making as in the growth phase</li> </ul>	<p style="text-align: center;"><b><u>INNOVATION AND STRATEGY</u></b></p> <ul style="list-style-type: none"> <li>•Consolidation of product market strategy</li> <li>•Focus on efficiently supplying a well-defined market</li> <li>•Conservatism</li> <li>•Slower growth</li> </ul>
<p><b>REVIVAL PHASE:</b> there are more innovations than in any other organization life cycle period. The diversity of products and markets leads to a divisionalized structure. The organizational board uses sophisticated controls to monitor the divisions performance in order to guide their strategic decisions. The increased complexity requires other types of environmental monitoring control and internal coordination, beyond those common to the previous phase. The decision style backs to privilege innovation and risk-taking to generate growth. The renewed boldness, however, is balanced by a more analytical and participatory decision-making. There is a conscious attempt to formulate a strategy in order to guide the organizational future course.</p>		
<p style="text-align: center;"><b><u>SITUATION / ENVIRONMENT</u></b></p> <ul style="list-style-type: none"> <li>•Very large</li> <li>•Environment very heterogeneous, competitive and dynamic</li> </ul>	<p style="text-align: center;"><b><u>ORGANIZATION</u></b></p> <ul style="list-style-type: none"> <li>•Divisional basis of organization</li> <li>•High differentiation</li> <li>•Sophisticated controls, scanning and communications in information processing: more formal analysis in decision making</li> </ul>	<p style="text-align: center;"><b><u>INNOVATION AND STRATEGY</u></b></p> <ul style="list-style-type: none"> <li>•Strategy of product-market diversification, movement into some unrelated markets</li> <li>•High level of risk-taking and planning</li> <li>•Substantial innovation</li> <li>•Rapid growth</li> </ul>
<p><b>DECLINE PHASE:</b> organizations reduce the reactions to external environment stimuli, becoming stagnant and starting to emphasize the internal processes without the presence of a relevant control system. The communication between areas and hierarchical levels is weak, reducing the capacity to respond to the challenges. Decision-making is characterized by a high level of conservatism and centralization. Crisis management leaves little time for the board to perform analysis. The organization regresses to simple solutions for the serious problems it faces.</p>		
<p style="text-align: center;"><b><u>SITUATION / ENVIRONMENT</u></b></p> <ul style="list-style-type: none"> <li>•Market size</li> <li>•Heterogeneous and competitive environment</li> </ul>	<p style="text-align: center;"><b><u>ORGANIZATION</u></b></p> <ul style="list-style-type: none"> <li>•Formal, bureaucratic structure</li> <li>•Mostly functional basis for organization</li> <li>•Moderate differentiation and centralization</li> <li>•Less sophisticated information processing systems and decision making methods</li> </ul>	<p style="text-align: center;"><b><u>INNOVATION AND STRATEGY</u></b></p> <ul style="list-style-type: none"> <li>•Low level of innovation</li> <li>•Price cutting</li> <li>•Consolidation of product-market</li> <li>•Liquidation of subsidiaries</li> <li>•Risk aversion and conservatism</li> <li>•Slow growth</li> </ul>

Table 2: Life cycle model by Miller & Friesen (1984)

Source: Adapted from FRIESEN & MILLER (1983, p. 340; 1984, p. 1163) and NECYK (2008, p. 31-33)

Based on the proposed life cycle model, Miller & Friesen (1984) conducted a longitudinal empirical study covering 161 organizations in 36 historical periods to identify four

characteristics or attributes (situation / environment, structure, style of decision making and strategy) within each stage of life. The results obtained by Miller & Friesen (1984) are summarized by Moores & Yuen (2001, p. 356), as shown in Table 3. It is worth noting that Moores & Yuen (2001) do not present the results of "organizational situation" characteristic.

<b>SITUATION / ENVIRONMENT</b>				
	<b>SIZE / AGE</b>	<b>OWNERSHIP</b>	<b>INFLUENCE IN DECISION-MAKING</b>	<b>MARKET</b>
<b>BIRTH</b>	<ul style="list-style-type: none"> <li>Firm is small both in absolute terms and relatives to competitors</li> <li>Young firm</li> </ul>	<ul style="list-style-type: none"> <li>Tightly concentrated in the hands of one, or a very few individuals</li> </ul>	<ul style="list-style-type: none"> <li>Strong influence of the mayor directors and shareholders</li> </ul>	<ul style="list-style-type: none"> <li>Non-competitive and non-hostile</li> <li>Low heterogeneity</li> </ul>
<b>GROWTH</b>	<ul style="list-style-type: none"> <li>Firm is larger and older than those in the birth phase both in absolute terms and relatives to competitors</li> </ul>	<ul style="list-style-type: none"> <li>More dispersed than in birth phase</li> </ul>	<ul style="list-style-type: none"> <li>Less influence of the mayor directors and shareholders than in birth phase</li> </ul>	<ul style="list-style-type: none"> <li>Competitive and hostile</li> <li>More heterogeneous than in birth phase</li> </ul>
<b>MATURITY</b>	<ul style="list-style-type: none"> <li>Firm is larger and older than those in either the birth or the growth phase both in absolute terms and relatives to competitors</li> </ul>	<ul style="list-style-type: none"> <li>More dispersed than in previous phases</li> </ul>	<ul style="list-style-type: none"> <li>Less influence of the mayor directors and shareholders than in the previous phases</li> </ul>	<ul style="list-style-type: none"> <li>More competitive and hostile than in the previous phases</li> <li>Less heterogeneous than in the growth phase</li> </ul>
<b>REVIVAL</b>	<ul style="list-style-type: none"> <li>Firm is larger than those in the others four phases both in absolute terms and relatives to competitors</li> </ul>	<ul style="list-style-type: none"> <li>More dispersed than in previous phases</li> </ul>	<ul style="list-style-type: none"> <li>Moderate influence of the mayor director and shareholders</li> </ul>	<ul style="list-style-type: none"> <li>More competitive, dynamic and heterogeneous than in the others four phases</li> <li>More hostile than in the maturity phase</li> </ul>
<b>DECLINE</b>	<ul style="list-style-type: none"> <li>Firm is quite similar in age and size to those in the maturity phase</li> </ul>	<ul style="list-style-type: none"> <li>Less dispersed than in the revival phase</li> </ul>	<ul style="list-style-type: none"> <li>More influence of the mayor directors and shareholders than in the revival phase</li> </ul>	<ul style="list-style-type: none"> <li>Level of market restriction greater than in the birth phase and less than in the growth phase</li> <li>Dynamism and heterogeneity similar to the growth phase</li> <li>More hostile than in the four other phases</li> </ul>
<b>ESTRATEGY</b>				
	<b>LEVEL OF PRODUCT/SERVICE INNOVATION</b>		<b>SCOPE OF PRODUCT/MARKET</b>	
<b>BIRTH</b>	<ul style="list-style-type: none"> <li>Considerable</li> </ul>		<ul style="list-style-type: none"> <li>Narrow</li> </ul>	
<b>GROWTH</b>	<ul style="list-style-type: none"> <li>Incremental</li> </ul>		<ul style="list-style-type: none"> <li>Broad</li> </ul>	
<b>MATURITY</b>	<ul style="list-style-type: none"> <li>Low</li> </ul>		<ul style="list-style-type: none"> <li>Consolidated</li> </ul>	
<b>REVIVAL</b>	<ul style="list-style-type: none"> <li>Substantial</li> </ul>		<ul style="list-style-type: none"> <li>Diversified</li> </ul>	
<b>DECLINE</b>	<ul style="list-style-type: none"> <li>Low</li> </ul>		<ul style="list-style-type: none"> <li>Consolidated</li> </ul>	
<b>STRUCTURE</b>				
	<b>STRUCTURING OF ACTIVITIES</b>		<b>CONCENTRATION OF AUTHORITY</b>	
<b>BIRTH</b>	<ul style="list-style-type: none"> <li>Informal and undifferentiated</li> </ul>		<ul style="list-style-type: none"> <li>Highly centralized</li> </ul>	
<b>GROWTH</b>	<ul style="list-style-type: none"> <li>Moderately formal and differentiated</li> </ul>		<ul style="list-style-type: none"> <li>Decentralized</li> </ul>	

MATURITY	• Formal and moderately differentiated	• Moderately decentralized	
REVIVAL	• Formal and highly differentiated	• Decentralized for divisional decisions but highly centralized for overall strategy making	
DECLINE	• Very formal and moderately differentiated	• Moderately decentralized	
<b>DECISION-MAKING METHOD</b>			
	STYLE	AMOUNT OF INFORMATION USED	DEGREE OF FOCUS IN USE OF DATA
BIRTH	• Decisive	• Minimum	• Single solution
GROWTH	• Integrative	• Maximum	• Multiple solutions
MATURITY	• Hierarchical	• Maximum	• Single solution
REVIVAL	• Flexible	• Minimum	• Multiple solutions
DECLINE	• Decisive	• Minimum	• Single solution

Table 3: Organizational characteristics and life cycle phases by Miller & Friesen (1984)  
Source: Adapted from Moore & YUEN (2001, p. 356) and FRIENSEN & MILLER (1984, p. 1170-1174)

In addition to fitting the different characteristics in each stage of organizational life cycle, Miller & Friesen (1984) verify that the sequence of stages does not exactly follow the models found in the literature. There is no sequence that is irreversible, unique and definitive. Hence, the progression stages of life cycle would not be deterministic. The major trend observed is that the organization remains at the same stage. Moreover, the duration of each stage varies considerably.

According to Miller (1987), there is a historical sequence between imperatives, i.e., for each organizational life cycle stage there is an element that has predominant influence. Thus, during the birth stage, the predominant element is leadership: "during the birth phase, firms are often small, simple, and dominated by a founder pursuing the leadership imperative" (MILLER, 1987, p. 698). In the growth phase, however, competitive and turbulent markets induce firms to become more adaptive and the environment becomes the dominant factor of influence. In the maturity phase, "further increases in scale, stabilizing markets, barriers to entry, and oligopolization may encourage a more insular and bureaucratic mode of operation, introducing the structural imperative" (MILLER, 1987, p. 698), i.e., the structure becomes the dominant factor of influence. Yet the rigidity of bureaucracy (tolerated due to the mass production efficiencies in less threatening environment) immobilizes the evolution of

strategy, making it inappropriate and delayed until economic decline or deregulation requires a strategy reformulation. Then, during the rebirth phase, strategy becomes an imperative factor, followed by leadership and environment.

Greiner (1972, *apud* Necyk, 2008) theorizes that organizations develop in alternating cycles of evolution and revolution, and the transitions are marked by crisis. Thereby, after surviving a crisis, the organization has a period of continuous growth until a new internal or external event causes another collapse. During these periods, only minor adjustments would be necessary to management practices, without changing the general management pattern, in order to maintain growth. In periods of revolution, the management practices suffer great changes to fit new organizational characteristics. Those companies that insist on the old practice would be condemned to stagnation or decline.

Some life cycle models were developed to help entrepreneurs and emerging technology-based companies (TBC's). After performing a compilation of various organizational development models, Hanks & Chandler (1994) proposed a grouping of four development stages, namely: conception and development, commercialization, expansion and consolidation. Hanks & Chandler (1994) list the main problems to overcome at each stage of the model, as shown in Table 4.

REFERENCE MODEL	CONCEPTION AND DEVELOPMENT	COMMERCIALIZATION	EXPANSION	CONSOLIDATION
<b>DODGE &amp; ROBINS – 1992</b>	<ul style="list-style-type: none"> <li>Transforming idea into a business venture</li> </ul>	<ul style="list-style-type: none"> <li>Stabilizing production and reliability</li> <li>Matching demand and managing cash flow</li> <li>Formalizing organization structure</li> </ul>	<ul style="list-style-type: none"> <li>Developing controls</li> <li>Securing adequate selling capacity</li> </ul>	<ul style="list-style-type: none"> <li>Taking advantage of market position</li> <li>Initiating change</li> <li>Eliminating inefficiencies overlooked during growth</li> </ul>
<b>FLAMHOLT Z - 1986</b>	<ul style="list-style-type: none"> <li>Inventing and defining market</li> </ul>	<ul style="list-style-type: none"> <li>Developiing products and services</li> </ul>	<ul style="list-style-type: none"> <li>Acquiring resources</li> <li>Developing operating systems</li> <li>Learning to delegate</li> </ul>	<ul style="list-style-type: none"> <li>Developing management systems</li> </ul>
<b>GALBRAITH - 1982</b>	<ul style="list-style-type: none"> <li>Inventing and making</li> </ul>	<ul style="list-style-type: none"> <li>Making it well and testing it</li> </ul>	<ul style="list-style-type: none"> <li>Making and distributing</li> </ul>	<ul style="list-style-type: none"> <li>Making business profitable</li> </ul>

	prototype		product in volume <ul style="list-style-type: none"> <li>Power transfer from engineering to administration</li> </ul>	
<b>GREINER - 1972</b>	<ul style="list-style-type: none"> <li>Creating product and market</li> </ul>	<ul style="list-style-type: none"> <li>Overcoming “leadership crisis” by hiring a capable business manager</li> </ul>	<ul style="list-style-type: none"> <li>Overcoming “autonomy crisis” through increased delegation</li> </ul>	<ul style="list-style-type: none"> <li>Overcoming “control crisis” through increased coordination</li> </ul>
<b>KAZANJIAN - 1988</b> <b>KAZANJIAN &amp; DRAZIN - 1990</b>	<ul style="list-style-type: none"> <li>Technology development</li> <li>Building prototype</li> <li>Selling product and business Idea to financial backers</li> </ul>	<ul style="list-style-type: none"> <li>Making products work well</li> <li>Learning to produce in quantity</li> <li>Setting up task structure</li> <li>Gearing up for first marketing</li> </ul>	<ul style="list-style-type: none"> <li>Producing, selling and distributing in volume</li> <li>Overcoming functional crisis</li> <li>Growth-related personnel problems</li> <li>Avoiding shakeout due to ineffectiveness or inefficiency</li> </ul>	<ul style="list-style-type: none"> <li>Maintaining growth, momentum and market share</li> <li>Profitability</li> <li>Internal controls</li> </ul>
<b>SCOTT &amp; BRUCE - 1987</b>	--	<ul style="list-style-type: none"> <li>Obtaining customers</li> <li>Economic production</li> <li>Managing revenues and expenses</li> </ul>	<ul style="list-style-type: none"> <li>Managing and financing growth</li> <li>Amassing resources</li> <li>Maintaining control</li> </ul>	<ul style="list-style-type: none"> <li>Expense control</li> <li>productivity</li> </ul>
<b>SMITH, MITCHEL &amp; SUMMER - 1985</b>	--	<ul style="list-style-type: none"> <li>getting organization going</li> <li>gaining support of resource suppliers</li> </ul>	<ul style="list-style-type: none"> <li>managing demands of expansion</li> </ul>	<ul style="list-style-type: none"> <li>garnering support for status quo or restructuring to allow new growth</li> </ul>
<b>OBS.</b>	The references are available in Hanks & Chandler (1994)			

Table 4: Problems to be overcome at each stage of life cycle  
Source: HANKS & CHANDLER (1994, p. 27)

Other life cycle models were proposed not characterizing organizations as a whole, yet addressing how organizations evolve in relation to production systems. As an example, the study of Victor & Boynton (1998) can be mentioned that considers the production systems development in five stages, namely: craft work, mass production, process enhancement (using concepts of Total Quality Management and Toyota Production System), mass customization, and co-configuration (adaptive production system).

Taking into account the existence of distinct life cycle models/theories, some researchers carry out simplifications to characterize a particular phase of organizational life cycle. An example is the work by Baker & Cullen (1993) that used three basic characteristics to classify

the organization's stage of life cycle: age, size and situation (growth or decline). Based on the life cycle theories, Baker & Cullen (1993) derive hypotheses and conduct empirical tests examining how the settings of ages and sizes combine with organizational growth and decline in order to influence the administrative reorganization of top-level managers. The empirical tests are conducted from the examination of the administrative reorganization of a 200 colleges and universities group in a period of ten years. Figure 2 provides a comparison between the hypotheses proposed and the empirical tests findings:

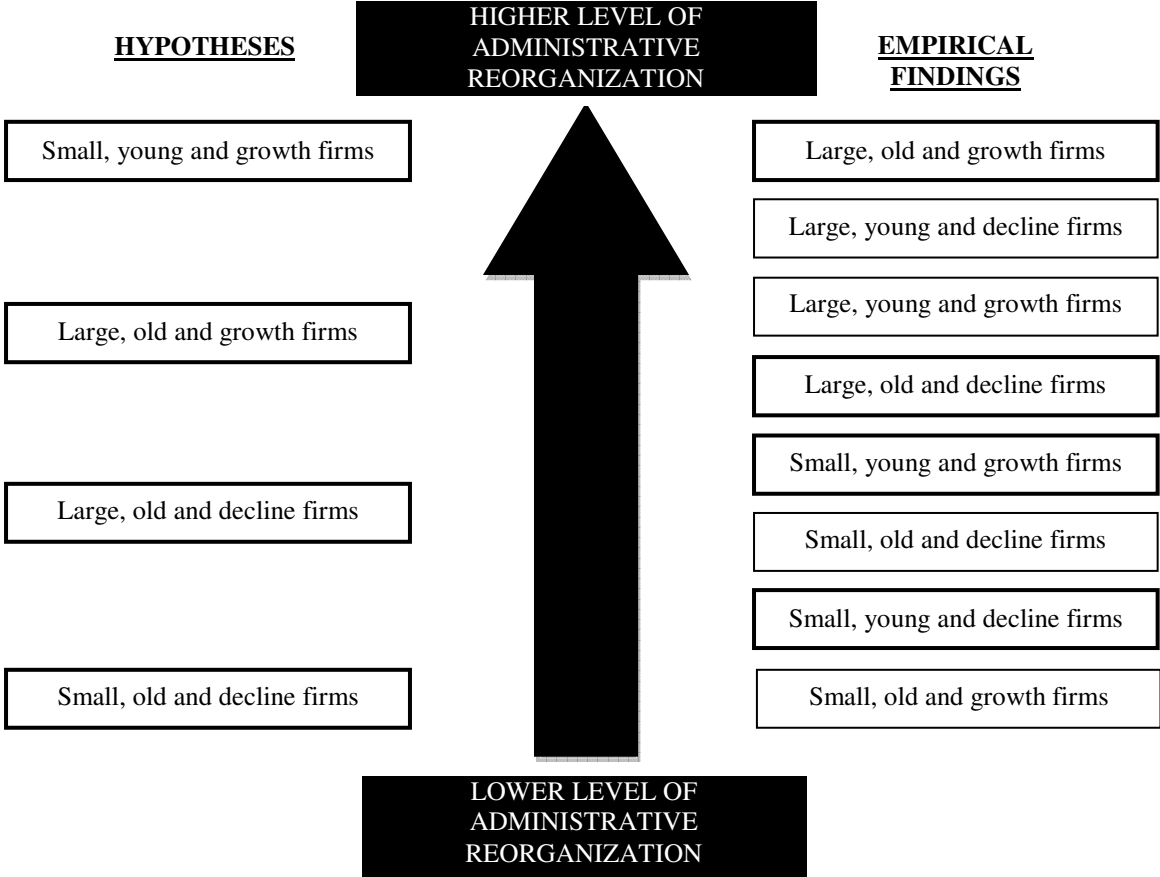


Figure 2: Comparative analysis between hypotheses and empirical findings on the relationship among size, age and situation (growth and decline) and the level of administrative structure reorganization  
 Source: Adapted from BAKER & CULLEN (1993, p. 1267-1268)

Contrary to predictions from the life cycle theory, the study empirical results suggest that large firms work with greater force to reorganize their administrative structures. Moreover, the high rates of reorganization found in the large organizations researched (colleges and universities), especially those characterized as old and growth, suggest the supremacy of high

levels of complexity managing as a driving force for reorganization. Baker & Cullen (1993) conclude that size, age and size changing (growth or decline) have important influences on administrative reorganization. However, the authors emphasize that the veracity of the inferences related to the competitive pressures for change and stability produced by contextual settings need more direct examination and surveys on various organization types.

## **2.2. Management accounting**

The term "management accounting" (MA) is sometimes used in an interchangeable way with the terms "management accounting systems" (MAS), "management control systems" (MCS) and "organizational control" (OC). However, according to Chenhall (2003), these terms have different meanings. Management Accounting is the set of practices such as budgeting and product costing, while managerial accounting systems relate to the systematic use of management accounting practices in order to achieve some goal. Management control systems are more extensive and enclose management accounting systems including, for example, personal control and clans. Management controls are usually referred to as controls built into processes and activities, such as: statistical process control (SPC), just in time production system (JIT), among others (CHENHALL, 2003).

Management accounting research gained strength as from the 1980s with the opening of new international channels for the dissemination of academic research with a different perspective in the examination of phenomena, with multidisciplinary concern and a variety of problems analysis methods (FREZATTI, AGUIAR & GUERREIRO, 2007; HESFORD et al., 2007). It is worth noting that, unlike financial accounting (normative), management accounting (non-normative) can be understood in different ways, depending on the author vision. Thus, in theory, different concepts and objectives of management accounting can be identified. Aguiar, Frezatti & Guerreiro (2007) conducted a survey on management accounting six concepts / objectives. This survey is completed and presented in Table 5:

YEAR	AUTHORS	MANAGEMENT ACCOUNTING CONCEPTS / OBJECTIVES
1981	Anthony & Welsch*	Provide useful information for managers, who are people inside that organization.
1989	Anderson, Needles & Cadwell*	Process of identification, measurement, accumulation, analysis, preparation, interpretation and communication of financial information used by managers to plan, evaluate and control the organization to ensure the appropriate use and accountability of its resources.
1997	Hansen & Mowen*	Identify, collect, measure, classify, and report information that is useful for managers in planning, control and decision-making.
2000	Atkinson <i>et al.</i> (2000)	Process of producing financial and operational information to employees and directors. The process should be directed by the individual's informational needs within the enterprise and should guide operational decisions and investments.
2000	Horngren, Foster & Datar*	Measuring and reporting financial information and non-financial to help managers to take decisions in order to achieve the organization objectives.
2000	Louderback <i>et al.</i> *	Provide information to support the organization internal managers' needs.
2004	Horngren, Sundem & Stratton*	Process of identifying, measuring, collecting, analyzing, preparing, interpreting and communicating information to assist managers to achieve organizational objectives.
2007	Garrison, Nereen & Brewer (2007)	Provide information to managers who run and control the organization operation.
<b>OBS.</b>	(*) The references are available in Frezatti, Aguiar & Guerreiro (2007)	

Table 5: Management accounting concepts / objectives  
Source: Adapted from FREZATTI, AGUIAR & GUERREIRO (2007)

Concerning academic research, Shields (1997) presents a taxonomy of research topics in management accounting, as shown in Table 6:

TOPICS OF MANAGEMENT ACCOUNTING RESEARCH
<p><b>Management Control Systems</b></p> <ul style="list-style-type: none"> <li>• Incentives</li> <li>• Budgets or budgeting</li> <li>• Performance measurement</li> <li>• Transfer pricing</li> <li>• Responsibility Accounting</li> <li>• International control</li> </ul>
<p><b>Cost Accounting</b></p> <ul style="list-style-type: none"> <li>• Cost accounting overall</li> <li>• Cost allocation</li> <li>• Activity-based costing</li> <li>• Product costing</li> <li>• Cost variances</li> </ul>
<p><b>Cost Management</b></p> <ul style="list-style-type: none"> <li>• Quality</li> <li>• Just-in-time</li> </ul>

<ul style="list-style-type: none"> <li>• Use of costs for decision-making</li> <li>• Benchmarking</li> <li>• History</li> </ul>
<b>Cost Drivers</b>
<b>Management Accounting, Information and Systems</b>
<b>Research Methods and Theories</b>
<b>Capital Budgeting and Investment Decisions</b>

Table 6: Topics of management accounting research  
Source: Adapted from Shields (1997)

The topics presented by Shields (1997) were used to characterize the management accounting research status concerning articles published by American researchers during the early 1990s. Other classifications of management accounting research have been proposed. As an example, the propositions of Mensah, Hwang & Wu (2004) may be mentioned, which showed an abbreviated taxonomy and correlated to the topics proposed by Shields (1997) to characterize theoretical fields (economy, sociology, psychology, among others) in which management accounting research was positioned in the period from 1986 to 2000. Another proposal was presented by Hesford et al. (2007) who broaden and deepen the study developed by Shields (1997) for the period between 1981 and 2000. Although more recent, these two taxonomies are based on the research topics proposed by Shields (1997). It should be noted that the topics organized by Shields (1997) are part of the methodology used in this study, presented below.

### **3. METHODOLOGY**

The research had a descriptive purpose (VERGARA, 1997) and conducts a Bibliometric analysis or bibliometrics, followed by citation analysis. According to Fonseca (1986), bibliometrics is the application of literature statistics. The first bibliometrics research occurred in 1917 and its concept was found in Spinak (1996, p.34) as "application of statistical analysis study on the characteristics of the use and creation of documents". According to Castro (1997, p. 13), quantitative methods used to measure and evaluate

scientific knowledge is bibliometrics and the advantages of this evaluation method are to mitigate the elements of trial and produce quantitative results that tend to be the sum of many small trials and assessments made by several people. Studies have used bibliometrics in different areas and for several purposes, such as a productivity, frequency distribution measure and frequency measure of authors, words or phrases in texts on a particular subject, performance measures, and establishing core areas of dispersion on a given subject (CARDOSO et al, p. 35). From the application of citations analysis, trends can be raised in concentration camps, in institutions, in countries and the use of certain journals (MOREL & MOREL, 1977). Thus, studies or citation analysis are fundamental for the understanding scientific communication (ROUSSEAU, 1998).

The aim is to contribute to the understanding of how organizational life cycle theories contribute to managerial accounting research in an international context. The research, to be intentional and not a random probability, has its limitations on the scope of the source mentioned, which weakened the character of inference of this study to other journals, proceedings, dissertations and theses, for example.

The research was conducted in three stages. The first stage, was a bibliometric survey on the management accounting science constructed under the perspective of organizations life cycle theories. In the second stage, there was an analysis of the first study that identified research on managerial accounting about organizational life cycle theories. In the third and final stage, from the use of the same database as the second stage, the most cited authors and works were identified, as well as works in the countries where the studies were originally published. In the third and final stage, the use of the same general methodology structure used in the study is shown in Figure 3:

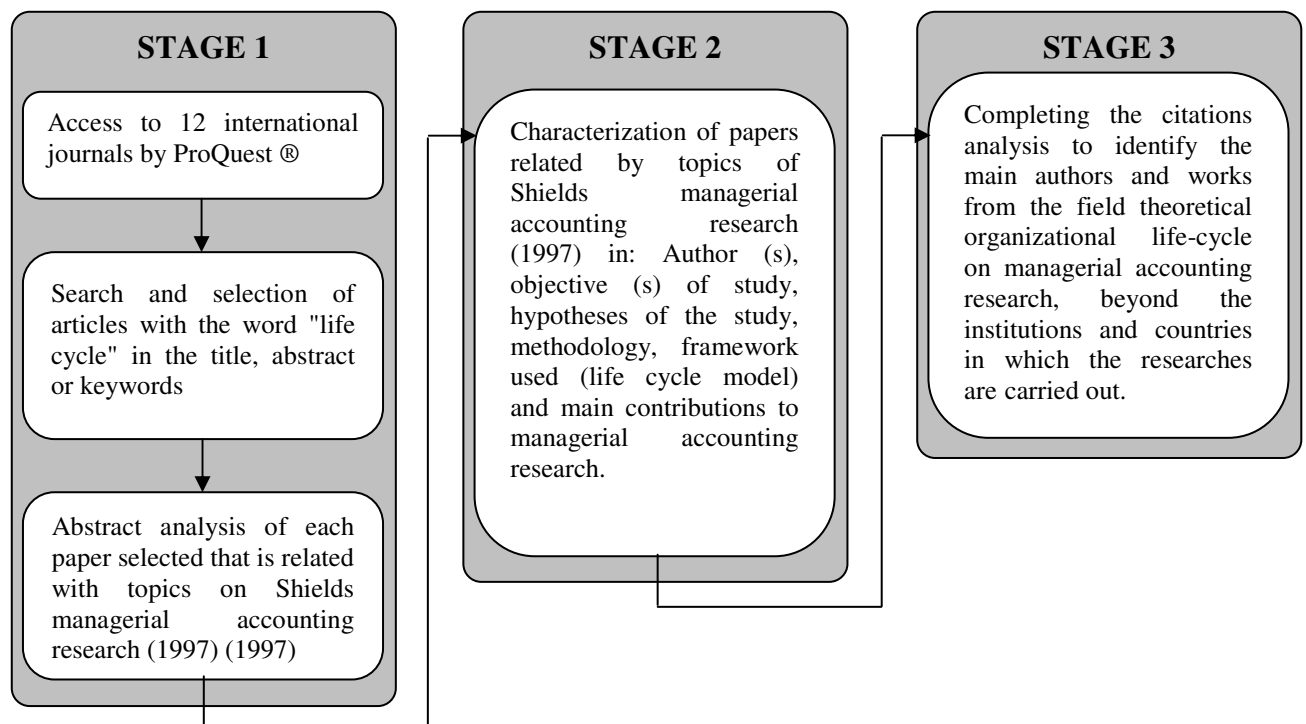


Figure 3: Framework of the methodology used

### 3.1. First stage research

First, a research was conducted in the scientific ProQuest® portal (2008) based on any article that contained the words "life cycle" in the title, abstract or keywords. To this end, 12 international journals relevant to the area of managerial accounting were researched. The list of journals reviewed and the research horizon and are presented in Table 7. It is noteworthy that the research horizon analysis was limited to the availability of journals accessible in the portal.

INTERNATIONAL JOURNAL	RESEARCH HORIZON ANALYZED	
	FIRST EDITION	LAST EDITION
BEHAVIORAL RESEARCH IN ACCOUNTING	1991; Vol. 3	2008; Vol.20, Iss.2
CONTEMPORARY ACCOUNTING RESEARCH	Fall 1991; Vol. 8, Iss.1	Fall 2008; Vol.25, Iss.3
MANAGEMET ACCOUNTING RESEARCH	March 1993; Vol. 4, Iss. 1	September 2008; Vol. 19, Iss.3
ACCOUNTING, ORGANIZATIONS AND SOCIETY	1976; Vol. 1, Iss. 1	October-November 2008; Vol.33, Iss.7-8
JOURNAL OF ACCOUNTING AND ECONOMICS	March 1979; Vol. 1, Iss. 1	September 2008; Vol. 46, Iss. 1
JOURNAL OF ACCOUNTING LITERATURE	Spring 1982; Vol.1	2007; Vol.26
JOURNAL OF ACCOUNTING RESEARCH	June 2001; Vol. 39, Iss 1	December 2008; Vol.46,

		Iss. 5
JOURNAL OF MANAGEMENT ACCOUNTING RESEARCH	Fall 1992; Vol.4	2007; Vol. 19
REVIEW OF ACCOUNTING STUDIES	March 1996; Iss. 1	December 2008; Vol. 13, Iss.4
THE ACCOUNTING REVIEW	October 1971; Vol.46, Iss.4	July 2008; Vol.83, Iss.4
MANAGEMENT ACCOUNTING	September 1968; Vol.50, Iss.1	August 1986; Vol. 68, Iss.2
MANAGEMENT ACCOUNTING QUARTERLY	Fall 2003; Vol.5, Iss.1	Outono 2007; Vol.9, Iss.1

Table 7: Horizon and papers analyzed

All articles from the search had their abstracts reviewed to determine if the life cycle theory in discussion related to organization was present and whether the study actually had a grip with the search topic of managerial accounting, as Shields taxonomy (1997). Articles that dealt with life cycle theories, but were not related to the organization as a whole have been segregated and classified according to type of life cycle theory dealt. But the articles that dealt with any theory or model of organizational life cycle were analyzed in detail, as shown in the step procedure below.

### 3.2. Second stage research

Articles in international journals related to management accounting and treaties under the auspices of the organizational life cycle theories were extracted; some items contained in the contents were thoroughly examined and the following points were clarified: Author (s), objective (s) of study, hypotheses of the study, methodology, framework used (life cycle model) and the main contributions to managerial accounting research.

### 3.3. Third stage research

This stage was characterized by the search of the main highlights in terms of authors and works in the field of organizational life-cycle theory related to managerial accounting research, in addition to the identification of the institutions to which the authors are affiliated. To this end, a review on the basis of citations of articles examined in the second stage. Please note that for an author or work be counted, it two criteria were established. According to the

first criterion, the authors and works cited under the title containing the words "life cycle" or "configuration" were counted. According to the second criterion, all authors and works cited in the "introduction" section or any other section that contained the words "life cycle" or "configuration" were also recorded.

From citations analyses, tables were designed with the absolute and relative frequencies of authors and works cited. To facilitate the visualization of results, the highlights (authors and works) have been designed by bar graphs of calculated relative frequencies.

## 4. RESULTS

### 4.1. First stage research

From the analysis of the papers with the words "life cycle" in the abstract, title or keywords 2 studies were found dealing with behavioral life cycle, 11 papers dealing with product life cycle and 1 study that addressed the life cycle project. From this investigation, 8 are listed as papers under organizational life cycle theories. However, when analyzing the content of the papers, it was found that 2 of them had no direct relationship with the managerial accounting research, with a focus on research and development (R & D) and another was dedicated to the investigation of how the stock market reacts to changes in the growth of sales and capital expenditure taking into account the stages of life. From this investigation, of a total of 22 papers, 6 are listed as a theoretical basis using organizational life cycle and provide a contribution to managerial accounting research. Table 8 presents the papers retrieved for further analysis:

MOORES, K. & YUEN, S. (2001). Management accounting systems and organizational configuration: a life-cycle perspective. <b>Accounting, Organizations and Society</b> , Vol. 26, pp. 351-389.
AUZAIR, S.M. & LANGFIELD-SMITH, K. (2005), "The effect of service process type, business strategy and life cycle stage on bureaucratic MCS in service organizations", <b>Management Accounting Research</b> , Vol. 16, pp. 399-421.
DAVILA, T. (2005), "An exploratory study on the emergence of management control systems: formalizing human resources in small growing firms", <b>Accounting, Organizations and Society</b> , Vol. 30 No. 3, pp. 223-48.
GRANLUND, M. & TAIPALEENMAKI, J. (2005) Management control and controllership in new economy firms - a life cycle perspective. <b>Accounting, Organizations and Society</b> , Vol. 16, pp. 21-57.
SILVOLA, H. (2008). Design of MACS in growth and revival stages of the organizational life cycle.

Table 8: Papers from international analysis on managerial accounting

#### **4.2. Discussion and result analysis**

The adoption of a certain strategic approach by an organization depends on its life cycle phase, because along its development the organization needs to change important aspects of its structure reacting to internal and external changes.

The theoretical reference explored shows that a series of theories and cycle methods of the organization consider not only the contextual effects but also the different configurations that facilitate or difficult changes in the structure (BAKER & CULLEN, 1993). The emphasis of these studies highlights aspects that range from the cognitive behavior of the managers to the organizational and environmental structure of the company, because each phase goes through different problems (QUINN & CAMERON, 1983).

The understanding of the steps of this process allows the identification of the organizational dynamics in a clear way and the understanding of different variables, such as contingencies and regarding its configuration, that create organizational ruptures that lead to growth or decline. Besides that, it is an important instrument that can contribute towards to the strategic planning of any organization.

According to Moores & Yuen (2001), the model proposed by Miller & Friesen (1983, 1984) contributed significantly in the application of the organizational life cycle approaches, because it allows that the management accounting systems to be analyzed accordingly to the organizational characteristics in the light of the variations of its life cycle, what means that these systems become more complex when the organizations evolve.

Although important for a large number of organizations, only recently the literature has dedicated attention to the management's system evolution throughout the company's life

cycle. Theory shows that the organizational structure has become an essential variable to explain the appearance of new management control systems in the different of the life cycle (DAVILA, 2005). Therefore the direct relationship between the contingencies variables, the business strategy and the phase of the life cycle allows the investigation of the influence of these variables upon the conception of the management control systems. And, even though variables such as size, age, CEO change, etc. are relevant, there is no proof of how these variables affect the organization, in particular if the management control system adds to the existing theories of life cycle (AUZAIR & LANGFIELD-SMITH, 2005; DAVILA, 2005).

Thus, describe and explain the management control practices in companies that are growing rapidly or companies with a segment with rapid growth that focus mainly in areas such as Information Technology and corporate communication, in which strategic aspects are tied to specific management control systems still need specific life cycle models (GRANLUND & TAIPALEENMAKI, 2005).

In this case, it can be affirmed that the management accounting systems vary among the companies in their different life cycle stages, as well as the use of activity based costing (ABC) affects the utilization of the cost systems, independently of the company size, i.e. the utilization of ABC increases when the size of the company increases (KALLUNKI & SILVOLA, 2008).

Therefore, according to Silvola (2008), the company in a re-birth phase develops accounting and management control systems with essentially organizational and internal control purposes, independent of its growth phase. On the other hand, in a re-birth phase investors need management and accounting information in more detail to know how to obtain the best returns on their investments. Because of that, according to Moores & Yuen (2001), the issues related to level of control of the management tools that are being used, the way how the information is presented in terms of aggregation, integration, range and topicality are

considered measures of organizational auto-efficacy.

The importance of this analysis regarding management accounting is to understand how the activities and organizational structures change with time, once the majority of the management control systems are not associated the life cycle phase (AUZAIR & LANGFIELD-SMITH, 2005).

These analyses allow saying that the success or failure rates depend more and more on the management control, information and planning systems. This implies that in each phase of the life cycle different management accounting systems are used, considering that when organizations evolve in the model of the life cycle there is an increase in the complexity of the environment and of the administrative tasks. Therefore, the companies need a management accounting system that is more formal and allows more control when they become more mature or are in a rejuvenating phase (MOORES & YUEN, 2001; AUZAIR & LANGFIELD-SMITH, 2005; KALLUNKI & SILVOLA, 2008).

Furthermore, it is believed that the formalization of the organizational structures during their life cycle became an accepted method to comprehend the problems and opportunities associated to each phase lived by the organization and how their activities change with time. But, the empiric researches that were done do not prioritize certain contingencial variables such as size and age that can justify in a certain extent the relationship of cause-effect in the changes of stage of life cycle, as was highlighted by Davila (2005).

Despite the importance and the long period of the studies about models of life cycle, there still is a small parcel of periodic with a relevant impact factor that explore the influences the organizational life cycles in the management accounting.

#### **4.3. Third stage of the research**

Considering the criteria established in the methodology's third stage, figure 4 exposes the main authors in literature that wrote about life cycle based on the analysis of the citation of

the books analyzed in the previous stage. The universe analyzed returned 826 author citations, of which 150 refer to Dany Miller and 143 to Peter Friesen. These two author represent together 35,47% of all the citation and corroborate the results presented below, because relatively old publications as Miller & Friesen (1983, 1984) still are considered the starting point of research, and their work is quoted in the majority of the actual research related to management accounting and theories of organizational life cycle.

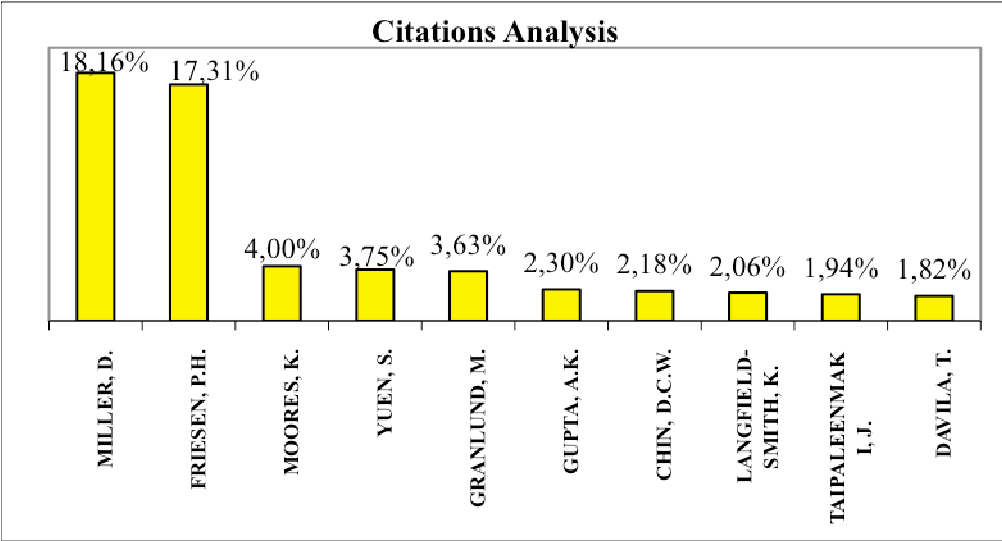


Figure 4: Main authors analyzed in the research

Looking at figure 5, it is possible to identify the main publications utilized as basis for studies regarding accounting management using models of organizational life cycle. Among the publications analyzes during the research, Miller & Friesen (1983, 1984) were the most relevant, representing 27,46%. Moores & Yuen’s (2001) publication was the third most reviewed, with 5,95% of the total. The behavior of the graphics presented in figures 4 & 5 is similar, and proof the influence of these two authors in the development of future research about the life cycle approach.

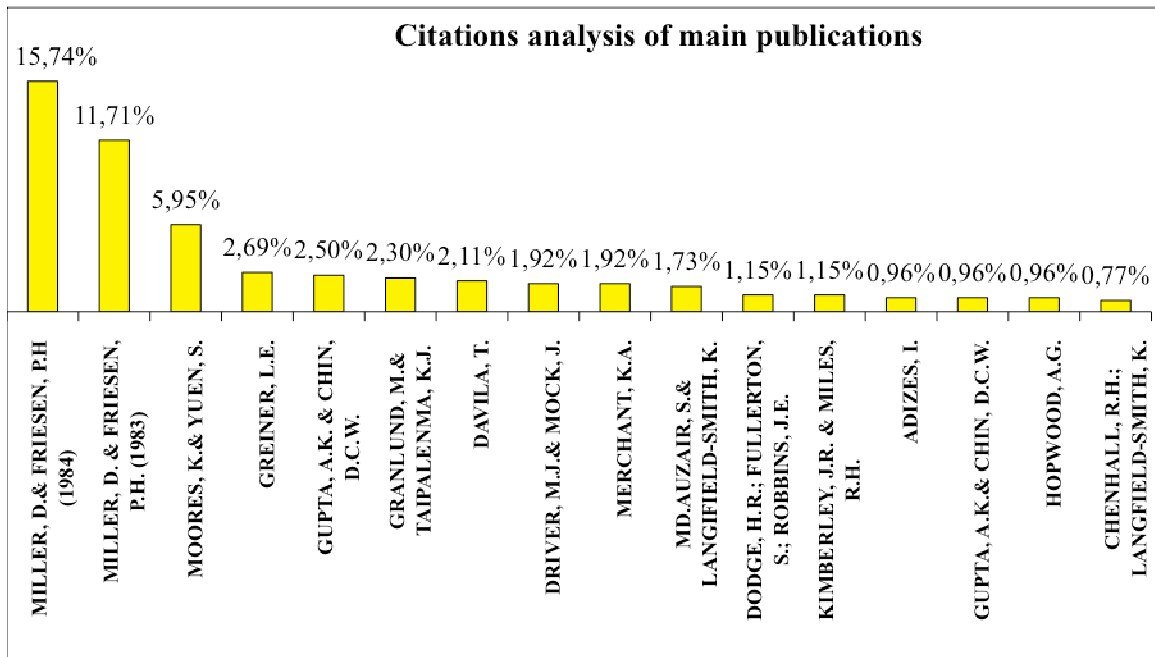


Figure 5: Main publications analyzed about organizational life cycle in international papers on managerial accounting

Based on the research about the publications that approach the theme of organizational life cycle, it is possible to trace a historic perspective of the publications and authors considered in our analyses (figure 6). Even though the main authors of the organizational life cycle theory have published their work in 1983 and 1984, a significant increase in the number of publications was noticed in the beginning of 90's and 2002. However, the newest publications are still underexplored, and always based on previously developed models.

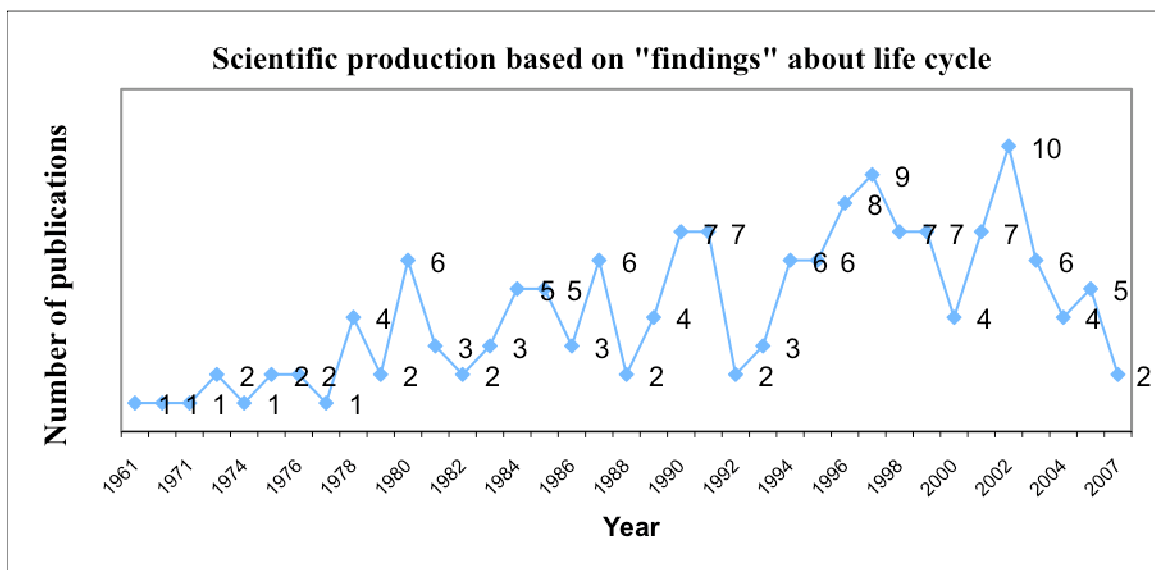


Figure 6: Annual publications analysis (recorded works) used in managerial accounting research based on organizational life cycle

## **5. FINAL CONSIDERATION**

The analyzed studies show that the characteristics of the companies influence the utilization of the management accounting systems in the different life cycle stages. Thus, the mature companies and those in a re-birth phase tend to implement sophisticated management systems that comply with their strategic perspectives. That's because their consolidated organizational structure allows continuous investments to improve the data to support decision.

The understanding of how formal management control systems appear helps the enterprising management (MOORES & YUEN, 2001). The informal approach to coordination and control of organizational activities become more difficult and expensive when the organization growth and formalize their processes of management. However, this is a vital to future growth. In the other hand, the size and the age of the organization are relevant variables to involve both organizational life stages as for definition of management control systems. Nevertheless, the theoretical approaches used so far cannot to identify how these variables influence the organizations.

Therefore, the construction of the organizational life cycle is introduced a relevant variable that influences the management accounting system project. Although the main part of the studies was about industrial management accounting systems, newer researches focus in companies of the third sector (services), considering Activities Based Costs (ABC) and technological resources that contribute to increase the knowledge about contextual variables that are relevant to management control systems.

The biggest limitation of this study resides in the fact that only one data source was used (scientific ProQuest® portal) not for its ineffectiveness, but because this research has focused

in international journals. So, the field of research has limited because other universe sources like as theses, dissertations, conference proceedings, weren't used.

This research collaborated in managerial accounting research therefore shows that the of organizational life cycle theories have contributed in this theoretical field, mainly for internal and external configurations factors that can affect the various accounting practices of control and systems management. This revelation gives the researcher the possibility of new management accounting studies linking both schools of thought.

For future research, it is suggested to conduct an analysis focusing in other data sources scientific production to ratify or complement the results presented in this research.

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