

## **International competence and knowledge studies and attitudes of the Brazilian Management accountant: analyses and reflections**

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**SUMMARY:** The main purpose of this study is to understand what the competences of the Management accountant are, compare to international studies and assess the existence of competences to be prioritized. This questioning has as motivation the placements of Hardern (1995), Morgan (1997), IMA (1996 e 1999) and IFAC (2003). The theoretical basis about competences is related to McClelland study (1973, 1998), Boyatzis (1982) and Spencer and Spencer (1993). This research is based on the study of 18 competences about knowledge, skills and attitudes obtained in accountant literature and that have been submitted to 200 Management accountants. Data collection instrument presented a 0.884 Cronbach Alpha. From a factorial analysis and after Kruskal-Wallis test 12 competences were obtained as the most relevant segregated in 3 factors, in comparison to international studies of nine common competences 4 were not considered relevant in statistical tests and only one must be prioritized. Results demonstrate differences between competences required from Brazilian Management accountants and from other countries, being that their reasons is an open-ended question up to the moment.

**Keywords:** Competences, management accountants and skills.

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## 1. INTRODUCTION

**T**he accountant's profession, as well as its specialties such as the Management accountant undergo alterations according to the changes occurred in the business world increasingly require certain competences from this professional. The so-called competences of a professional are studied, initially, in psychology area with the articles of McClelland (1973) and later with Boyatzis (1982) and then with Spencer & Spencer (1993), being that the latter has prepared the so-called competence dictionary of several professions. More recently, these studies have sought to relate the competences of the professionals to their intellectual, cognitive skills and emotional intelligence, such as the latest articles of McClelland (1998). Competence studies and their relations, also suffer influence from the approach of longitudinal studies made by Boyatzis, Stubbs and Taylor (2002) and Goleman, Boyatzis and McKee (2002) who worked segregating competences in self-management, relationship management and cognitive.

Despite all existing studies about the issue of competence, however, it is a consensus that it cannot be considered a settled issue yet. Competence is still a construct in formation. Allied to studies that seek the formation of a consensus in the formation of a constructor called competence and its application in the scope of positions in business organizations, it is also possible to find some researchers of specific knowledge fields who started using this theoretical basis to develop researches applied on competences in certain professions, highlighting for physicians with Epstein & Hundert (2002), business managers with Erondy & Sharland (2002), buyers with Giunipero and Percy (2000), with future managers Godoy, Antonello, Bido and Silva (2009) and accountants with IFAC e IMA. The accountant profession has a lot of specialties being that Management accountant is one of the most important and relevant in the profession, this being the reason for this study. However, this approach does not discourage studies for general accountant or other specialties such as taxes, audit, financial, among others. In the accounting area case, studies about competences are a little confused with the professional's functions and activities according to reports in the studies of AICPA (1999), IFAC (2003), Abdolmohammadi, Searson and Shanteau (2004) and Palmer, Ziegenfuss and Pinsker (2004). Considering the stage of the research about the accountant's competences, this study assumes demands being placed on the accountant being liable to recording in literature about the profession. From these studies and assembly of the competence dictionary, it was also tried to use the specialist panel to evaluate required

competences. After this analysis, it will be assessed whether competences obtained from Brazilian accountants are aligned with the competences listed in the international studies quoted Palmer, Ziegenfuss and Pinsker (2004). The article represents a view of the Management accountant profession in a behavioral line, trying to understand better the impacts of the stresses that currently involve this professional, emphasizing the harmonization issue of accounting standards, overall curriculum and even issues connected to information technology area. It is believed that, by making use of a greater effort to understand the Management accountant's competences, it will be possible to reinforce studies about accounting teaching issues, professional training, as well as about behavioral aspects of this profession. It is within this context that this paper is inserted.

## **2. THEORETICAL REFERENCE**

### **2.1. Competence Studies**

The competence study goes through a long line of interpretation that can be partly understood in the placement of Dutra, Hipólito and Silva (2000), report that when trying the answer: What is competence? One enters a minefield; such is the diversity of interpretations of the term over the last thirty years. According to the authors, however, the risk is worthwhile because it deals with a concept the purpose of which is to clarify cloudy aspects of people management. Considering the divergences recorded among the several authors, such as Woodruffe (1991), Le Boterf (1994) and Parry (1996), the term "competence" has as origin the word *competentia*, from Latin, meaning the quality of who is capable of appreciating and settling a certain subject, doing a certain thing, with capability, skill, aptness and good repute.

Another important aspect to be analyzed as far as competence is concerned is the association of the entire competence with the value-added ideal and delivery to certain context in independent manner from concerned position, which was later discussed by authors such Zarifian (2001) and Le Boterf (1994 and 2001) and Fleury & Fleury (2001). By value adding, Dutra (1999) understands as something that the person delivers to the organization in effective manner, in other words, something that remains, even when the person leaves the organization. Over the years, a set of authors began to assess both positioning seeing them in conjunction: the delivery and characteristics of the person, which may define it more properly. (Parry, 1996). Segregation of competences in inputs: knowledge, skills and attitudes and outputs: value adding, perhaps is not the best solution, because, as can be seen, there is a synergy between the two concepts and, at the same time, interdependence. Considering the discussions and lack of consensus in literature, about what competences are, in this paper it

makes use of these concepts: skills, capabilities, knowledge, traits and within the context of delivery, and we get very close to the triad referred to as CHA (Conhecimento, Habilidades e Atitudes in Portuguese): knowledge, skills and attitudes. Another concept to be understood is of models of competences that represent a set of competences required for a higher performance in a certain position, trying to identify required behaviors to perform, successfully, a certain function, according to Lucia & Lepsinger (1999). One of the most developed generic models of competences was of Boyatzis (1982), to whom the human organism is a complete system as well as organizations and these systems cannot be observed in separate manner, therefore, competences of a person must be understood by evaluating the context surrounding it. Construction of competence models for positions is discussed in several manners, but they can be synthesized in the view of de Spencer & Spencer (1993) who worked with 03 basic methods: the so-called classical method that uses employees with higher performance, specialist panel with meeting and discussion about the position to be modeled and studies of single or future. The latter being the most complicated, since there are no parameters to prepare the model. The logics of competence model construction, based on a specialist panel through an exploratory research, are the basis used in this research paper.

## **2.2. International studies of the management accountant competences**

The concern of the competence study in accounting profession has appeared more strongly in trade entities or associations since 1950, but the use and adoption of the term competence only occurs in the 1990s where the studies of: Big 8 Firms (1989), IMA (1994, 1996 and 1999), AECC/AAA (1996), IFAC (1998 and 2003), IIA (1999) and AICPA (1999) stand out. Big 8 Firms (1989) study reports an effort of the largest audit companies at the time to understand the competences of accountants and reinforce the necessary best, while the study of the American Accounting Association – AAA tries to reply to Big 8 White Paper trying to seek changes to education practices in accounting by forming the Accounting Education Change Commission (1996). In conjunction with discussions made, AAA, Institute of Management Accountants – IMA in 1994, 1996 and 1999 sponsors some studies about which required competences to management accountants would be departing from a listing of 162 and reaching the most important KSAs for accountants. Whereas the American Institute of Certified Public Accountants - AICPA in 1999 tries to direct studies to understand and assess which competences would be essential of accountants being that the same type of analysis occurs for internal auditors conducted by The Institute of Internal Auditors – IIA and at last the extended study of IFAC (2003). For evaluation and comparison purposes with the

data of this research the main competences quoted in above-mentioned studies are tabulated and presented next. In addition to the studies performed by the entities, we must consider that several accounting area researchers discuss the theme. The first is Kester (1928), going through Bower (1957), Heckert and Willson (1963) and, later, Henning and Moseley (1970).

Past all this evolution of the 1960's and 1970's, we have, in the 1980's and 1990's, a discussion about the strategic need of accounting and the more proactive role of the professional, allied to structural changes in teamwork and systemic view in organizations, reported in Hardern (1995), Laurie (1995) and Morgan (1997). The consolidation of these concepts and their implication on the profession can be seen in the studies of Sakagami, Yoshimi and Okano (1999) in the Japanese case. Specifically discussing the issue of the management accountant's competences we have semi-structured studies with emphasis to Malcarney (1964), Vatter (1986), Pierce (2001) and Boritz and Carnaghan (2003) where the issue is discussed as a business view, management techniques and capability to generate managerial information as important factors in this process.

As a consequence of the literature review about the accountant's competences is that one of the theoretical justifications for this study is that we have: shortage of studies about the accountant's competence and mainly studies focused on the management accountant's competences, because literature, mostly, deals with the professional's function and not the competence factor; almost all studies do not perform empirical surveys and do not even deal with the competence aspect through the psychology and human resources approach. Research development in this area based on more solid theoretical grounds and appropriate methodology is reported in the studies of Abdolmohammadi, Searson and Shanteau (2004), IFAC (2003), Pierce (2001), in the inventory of studies connected to behavioral accounting of Meyer and Rigsby (2001), Boritz and Carnaghan (2003), Cardoso and Riccio (2005) and Cardoso, Riccio and Albuquerque (2009). It is relevant to report that recent studies of international regulatory entities start to demonstrate greater concern with conceptual structuring.

This research issue, therefore, becomes relevant to the extent that it uses a broader conceptual approach than the regulatory view of accountants' competences and seeks empirical evidences with suitable statistical treatment to structure the management accountant's competences. In order to facilitate viewing the competences required from accountant, a summary of found articles was prepared, specifically about the professional of this area.

**Table 1: Summary of literature about management accountant competences**

Referências	Henning e Moseley (1970)	Morgan (1997)	Sakagami, Yoshimi e Okano (1999)	Needles, Cascini, Krylova e Moustafa (2001)	Esselstein (2001)	Pierce (2001)	Boritz e Carnaghan (2003)	Pesquisa das entidades contábeis	White Paper – Big Eight Kullberg e Gladstone (1989)	AECC/AAA Francis, Mulder e Stark (1990)	IMA Siegel e Sorensen (1994, 1996)	AICPA (1999)	IFAC (2003)
Ability to solve problems			X			X							
Interpersonal Confidence I		X	X	X	X				X	X	X	X	X
Analytical				X		X							
Interpersonal Relationship			X	X		X	X			X	X	X	X
Computing Skills		X		X	X				X	X			X
Leadership and teamwork				X	X	X			X		X	X	X
Listening effectively			X			X	X				X	X	X
General/Strategic View				X	X		X		X	X	X	X	X
Legal	X			X					X	X	X		X
Initiative/Attitude		X				X	X			X			
Quantitative	X										X		
Self-control		X											
Focus on customer			X		X								
Control tools	X					X	X			X	X		
Integrity and Confidence				X		X			X				
Measure counting		X	X										
Management Techniques		X		X		X					X		
Costs and Price	X					X	X						
Planning	X			X			X				X		
Outside Relationship	X		X										
Accounting and Finances	X			X		X	X		X	X	X	X	X
Information Management		X		X	X	X			X	X	X		X

Source: prepared by authors

### 3. METHODOLOGY

#### 3.1. Problem and Work Hypothesis

This study has an exploratory nature, seeking the development of the management accountant's competence structuring, for which it has a set of required characteristics for the development of this professional meeting the precepts pointed out by Spencer and Spencer (1993), Lucia & Lepsonger (1999) and Boyatzis, Stubbs and Taylor (2002). The purpose of this study is to investigate the competences required to the Brazilian management accountant and to compare that these competences are aligned with competences cited in studies of international accounting entities such as IFAC, IMA, AICPA, among others.

Based on this context, the following questions are placed to be discussed in this study: Question 1: What would the competences required for the management accountant be? Question 2: Are the most relevant competences cited in international accounting entities' studies in line with the study performed in Brazil? Question 3: Among presented competences are there competences that must be prioritized in the management accountant's development? For development of the study the following conceptual assumptions raised from the studies

of Boyatzis (1982) and Spencer & Spencer (1993) were considered: It is possible to prepare an essential competence structure for management accountants.

These new competences will be important to this professional because they provide him with a mapping of essential competences that may result in superior performance. Because of resources and cultural diversities among organizations, regions and countries and even accounting companies, the competence structure must be considered a temporary model. Additional jobs are necessary for their full utilization.

### **3.2. Sample**

The sample is intentional and not probabilistic during the months of June and October 2007, with graduate students, specialization level in accounting and controllership of two important Brazilian universities, the Pontifical Catholic University of Campinas and Mackenzie Presbyterian University. The students are selected to enter graduate school by considering their prior academic background and professional experience in the course concentration area and in order to answer the questionnaire had the obligation to act professionally in management accounting or controllership area for at least 3 years. Questionnaires were handed to students and answered personally or by e-mail. Out of the total 285 sent, 200 were answered and considered methodologically valid.

### **3.3. Composition of instrument**

Instrument construction followed 02 stages, the first one divided into the following steps: a) theoretical grounding analysis about competences in the scope of behavioral area; b) analysis of competences mentioned by studies focused in accounting area for preparation of variables to be measured including international studies; c) addition of identified competences according to concerned; d) construction of the meaning of each competence in the instrument aimed at interpretation error reduction on the part of respondents; e) holding 03 rounds of discussion with 04 professionals with wide experience in management accounting area to check adherence to the proposal and raise other variables. The second stage consisted of applying the questionnaire with 08 professionals for pre-testing purposes and, after the application, comments and remarks were collected about the instrument, which were assessed and incorporated, to the extent necessary, to the final instrument. Described competences were divided into capabilities, skills, knowledge and other personal characteristics. The questions were prepared in a 10-point Likert scale with 01 for no importance and 10 for extreme importance. The variables incorporated to the questionnaire are presented in table,

considering as research support the authors who describe with greater wealth of details the competence, both in the scope of authors connected to behavioral or accounting area.

**Table 2: Variables Considered in the Study**

Nº	Competence	Research Basis
V1	Analytical	Sakagami, Yoshimi and Okano (1999) and Pierce (2001)
V2	Self-control	Spencer & Spencer (1993) and Morgan (1997)
V3	Interpersonal Communication	Boyatzis, Stubbs and Taylor (2002), IFAC (2003) and Abdolmohammadi, (2004)
V4	Attitude/Endeavor	Spencer & Spencer (1993) and Laurie (1995)
V5	General/Strategic View	Bower (1957) and IMA (1999)
V6	Control Tools	Henning and Moseley (1970)
V7	Legal	AECC (1990) and White paper (1989)
V8	Information Technology	AECC (1990) and White paper (1989)
V9	Integrity and Confidence	Rogers, Dillard and Yuthas (2005)
V10	Accounting and Finances	Henning and Moseley (1970) and IMA (1999)
V11	Interpersonal Relationship	Boterf (1999) and Esselstein (2001)
V12	Effectively Listening	Morgan (1997) and AICPA (1999)
V13	Capability to solve problems	Morgan (1997) and Boyatzis, Stubbs and Taylor (2002)
V14	Planning	Pierce (2001) and Needles, Cascini, Krylova and Moustafa (2001)
V15	Management Techniques	Laurie (1995) e IMA – Siegel and Sorensen (1999)
V16	Leadership and Teamwork	Boyatzis, Stubbs and Taylor (2002) e IMA - Siegel and Sorensen (1999)
V17	Information Management	Laurie (1995) and Lamberton, Fedorowicz and Roohani (2005)
V18	Outside Relationship	Henning and Moseley (1970) and Morgan (1997)

Source: Prepared by the authors

For internal consistence, Cronbach's Alpha originally developed by Cronbach (1951) was used, considering test premises, the data presented a result of 0.884, which represents a good degree of the instrument reliability. It was noticed that none of the 18 variables placed for evaluation have a great effect on alpha composition when alpha results are analyzed by removing the effects of each variable in SPSS.

#### 4. Results of research

For presentation purposes of results, first, we have respondents' data:

**Table 3: Respondents' data**

	Respondents' Data			
	N	Percentage of Sample		
Gender	198	Men 112	Women 86	
Education Level	198	Undergraduate 168	Graduate 30	
Age Bracket	195	From 21 to 30 133	From 31 to 40 52	From 41 to 50 10
Position	196	Administrative 92	Senior Professional	Management/Executive Board 64
Line of Business	198	Industry 58	Trade 42	Services 98
Years of Professional	194	Up to 05 years 124	Over 05 up to 08 years 40	Over 08 years 30

Source: Prepared by authors

#### 4.1. Exploratory factorial analysis

Dealing with an exploratory study, statistical instrument used was the factorial analysis the basic purpose of which is to summarize data through linear combination (factors) among variables and to explain the relation between these variables. Factorial analysis operationalization followed the steps given by Hair (1998) and Tabachnick & Fidell (2001). By using the main component method where concern falls upon the common and specific variance and performing the significance test of obtained factors, we obtain the following results: a) Bartlett's sphericity the purpose of which is to know whether the correlation existing between variables is significant, to the point of just a few factors representing a large part of data variability. In this test  $p < 0.000$  was obtained for significance level of 0.05; b) Adequacy measure of Kaiser-Meyer-Olkin's (KMO) sample the purpose of which is to know whether the correlation between each pair of variables can be explained by the other variables included in the study. Obtaining in this study an absolute value of 0.830; c) anti-image matrix that analyzes the correlation of a variable against the others, the effects of the others controlled. In this test all combinations reached a correlation over 0.50 for each pair of variables. All these tests, together, demonstrate that the null hypothesis that matrix variables are not sufficiently correlated can be rejected. Thus accepting, the factorial analysis assumption placed by Hair (1998) and Tabachnick & Fidell (2001). Another considered and accepted criterion in factorial analysis, was communality, in other words, common variance of the variable in relation to the others had values over 60% for practically all variables, the only ones that were a little below of close to 50% the capability to solve problems and management techniques variables.

The choice of number of factors was done by using eigenvalues over 1, explained variance over 60% in accumulative and at last eigenvalue diagram analysis. Considering the analysis assumptions of each of these criteria placed by Tabachnick & Fidell (2001) and considering a study connected to Social Science placed by Hair (1998) defining a number of 04 factors as the one that best meets placed assumptions, demonstrating an explanatory power of 62.8% of variance.

Considering the choice of four (04) factors and the difficulty to analyze the main component matrix of some variables, Varimax orthogonal rotation was done, which is more adequate for cases where there are independence assumptions of components Hair (1998) which the case of this kind of study as performed by Giunipero and Percy (2000). From the rotation, the following rotated component matrix was obtained presented in table 04:

**Table 4 –Incomplete Factor Matrix (coefficients > 0.400) after Rotation**

Variables	Factors			
	1	2	3	4
Analytical		0.804148256		
Self-control	0.665347832			
Interpersonal communication	0.570304555			
Attitude/endeavor			0.731802858	
General/strategic view			0.644907998	
Control tools		0.80985695		
Legal		0.740616771		
Information Technology				0.704986275
Integrity and confidence				0.599871971
Accounting and Finances		0.798147453		
Interpersonal relationship		0.578784982		
Listening effectively	0.837008565			
Capacity to solve problems	0.43728763			
Planning		0.634756948	0.525636248	
Management Techniques	0.482347044		0.495968725	
Leadership/teamwork	0.802915353			
Information Management	0.765323621			
Outside relationship	0.682747309			

Source: Prepared by authors

By considering the good model adjustment criterion placed by Hair (1998) it is seen the Varimax rotation met the allocation process of variables to factors, as only two variables are verified, planning and management techniques, present two values over 0.40.

#### 4.2. Scale refinement

In this phase, scale refinement and denomination of each factor must be sought. Scale refinement refers to the definition of the number of variable that must compose accountants' competence model. To that end, Dutra's recommendation was used (2001), which indicates something around seven to twelve competences to form the model. Other authors foresee the use of reduced models with something around 8 to 14 competences, such as Horton (2000) and Zhong and Kan (2004). To Dutra (2001), this interval minimizes the subjectivity bias in evaluation of people and increases the possibility of overlap among competences. This fact has direct relation to practical use of the generic model. In order to perform this reduction, the parameter of variables that presented lower factorial load was used, demonstrating lower relation to common constructor, model proposed by Horton (2000). By following this criterion, in the case of this research, all variables that presented factorial loads less than < 0.600 were removed. The following variables fitted into this criterion: capacity to solve problems (0.437), management techniques (0.495), interpersonal relationship (0.578), integrity and confidence (0.599) and interpersonal communication (0.570). With these adjustments, the model passes from 18 variables to 12 variables.

After making these variable reduction, a new factorial analysis and a new analysis of all assumptions of this technique were made, which was fully met by the new data as described below. A reliability coefficient for the new scale was measured by Cronbach's Alpha of 0.847, event higher than minimum necessary standards. The extraction method was the main axis factoring and factor rotation method was Varimax, the same used up to the moment in this research. When running the model again, the following results were reached: a) Bartlett's sphericity test obtained  $p < 0.000$  for significance level of 0.05; b) for adequacy measure of Kaiser-Meyer-Olkin's (KMO) sample absolute value of 0.840 was obtained in this study; c) with anti-image matrix combinations that reached a correlation over 0.50 for each pair of variables were obtained and the one that obtained the lowest index was leadership/teamwork variable with 0.730. All these tests, together, demonstrate that the null hypothesis, according to which matrix variables are not sufficiently correlated, can be rejected.

Thus, accepting the factorial analysis assumption placed by Hair (1998) and Tabachnick & Fidell (2001). Another considered and accepted criterion in factorial analysis, was communality, in other words, common variance of the variable in relation to the others was over 50% for all variables, the only one that was below 50% was information technology with 36% being in this manner removed from the 13 variables meeting the assumption referred by Hair (1998). The number of factors was reduced to three (3) and departing from 13 to 12 variables, for which eigenvalues over 1 were used, explained variance over 67.4% in the accumulative and, at last, eigenvalue diagram analysis was performed. These data reached a new factor matrix after Varimax rotation, as presented below:

**Table 5: Incomplete factor matrix (coefficients > 0.400) after rotation and exclusions**

		Average	Standard Deviation	Factors		
				1	2	3
V1	Analytical	8.52	1.46	0.81531		
V2	Self-control	8.26	1.76		0.73886	
V3	Attitude/Endeavor	8.29	1.38			0.76177
V4	General/Strategic View	8.32	1.84			0.76942
V5	Control tools	8.69	1.57	0.85502		
V6	Legal	8.26	1.63	0.80326		
V7	Finance accounting	8.76	1.40	0.81480		
V8	Listening effectively	8.47	1.39		0.82184	
V9	Planning	8.82	1.21	0.64757		
V10	Leadership/teamwork	8.73	1.76		0.81651	
V11	Information Management	8.39	1.58		0.81076	
V12	Outside relationship	8.23	1.69		0.67609	

Source: Prepared by authors

### 4.3. Management accountant's competence factors

Considering factor rotation matrix results, 03 factors are indicated that, conceptually, were ranked as follows:

**Factor 01: Technical Competences:** it congregates competences aimed at specific accounting and control area knowledge, especially those related to technical aspects, such as accounting, budget, planning, costs and internal controls. Additionally, it includes the accountant's analytical view and strong knowledge of legal issues. It is clearly seen that the professional's basic characteristic is his technical competence. Competences referred here are: accounting and finances, legal, control tools, planning and analytical capacity.

**Factor 02: Behavioral Competences:** are related to behavioral aspects of this professional with internal and external members to the organization, as well as to the ability to communicate, analyze and solve business activity problems. Allied to these aspects there are issues related to information technology that forms part of this set of ability related to the management accountant. Competences related to these data are: self-control, listening effectively, leadership / teamwork, information management and outside relationship.

**Factor 03: Posture Competences:** among competences, perhaps this is the group that can most differentiate the general accountant from the management accountant, because in literature these collocations are done with a lot of emphasis even if from semi-structured studies. Developing and demonstrating the ability to endeavor, i.e., developing creative solutions to problems of the organizations innovating in the manner of work, as well as, having a close relation with strategic aspects of the organization demonstrating a broad business view. Listed competences were: attitude /endeavor and general/strategic view.

**Responses to Questions of this Research: Question 1: What would required competences from the management accountant be?** Item three present the questions of this research, from which the first one is being discussed here: What would required competences from Brazilian management accountant be?

Seeking clues to this question, it can be considered that the 03 factors described above can answer these questions. The order of factors seems to demonstrate a certain hierarchy or perhaps areas of competence to be considered in the training of these professionals. To that end, however, the research results need to be validated by management accounting professionals. The setting of this structure type was not identified in specific literature

referring to the management accountant, which reinforces the need and the importance of this proposal.

For future researches, following up impact of new management technologies and techniques in the professional's competences must be especially sought, as well as evaluating generic model competences with required competences for management accounting professionals of specific sectors, such as for audit and accounting companies and companies from sundry sectors, either financial, retail, industry and others. Based on theoretical grounding and empirical research results, a generic competence structure can be built as described by Boyatzis (1982) and, more specifically, by Spencer & Spencer (1993) formatting:

<b>Dimensions</b>	<b>Management Accountant Competences</b>
Technical Competences	Accounting and finances, legal, control tools, planning and analytical ability
Behavioral Competences	Self-control, listening effectively, leadership / teamwork, information management and outside relationship
de Posture Competences	Attitude / endeavor and general/strategic view

**CHART 1: GENERIC COMPETENCE STRUCTURE FOR MANAGEMENT ACCOUNTANT**

Source: Prepared by authors.

Despite the wide use of generic structures or model in people management area, there are criticisms such as those made by Blackmore (1999) who warns about the assumption that there is only one competent or effective professional type: the generic model one. Another critique refers to the organizational culture dependence where the model may be refuted or even different interpretations of the competence occur before different situations. In order to reduce errors by using generic structures, some authors indicate cautions in implementation, highlighting the following authors:

Boyatzis (1982) to whom the model must be aligned to objectives, culture and the organization's values; McClelland (1998), who deals with the need for senior management support and focus on performance improvement; Lucia & Lepsinger (1999) who reminds the need for trying to identify potential problems and their possible causes; develop alternate plans and establish communication channels.

**Question 2: Are the most relevant competences mentioned in international accounting entities' studies in line with the study performed in Brazil?**

Considering the competences mentioned in Chart 1 and 2 and coming from studies originating from accounting area entities and associations mainly from observations of Palmer, Ziegenfuss and Pinsker (2004) which the variables listed below may be the first ones

to be discussed. From this listing a comparison with the results of this research was made from the factorial analysis and exclusion lesser force variables, results and analyses are listed below:

Studied Variable (Table 2)	Competences	Studies					
		White Paper (1999)	AECC (1990)	IMA (1996) (1999)	AICPA (1999)	IFAC (2003)	Data of this Study
V3	Communication	X	X	X	X	X	
V11	Interpersonal relationship	X	X	X	X	X	
V5	General/Strategic view	X	X	X	X	X	X
V10	Accounting and finances	X	X	X	X	X	X
V13	Capacity to solve problems	X	X	X	X	X	
V17	Information Management	X	X	X		X	X
V4	Attitude and initiative	X	X	X		X	X
V8	Information Technology	X	X	X		X	
V16	Leadership and teamwork	X		X		X	X

**CHART 2: ACCOUNTANT'S COMPETENCES MENTIONED IN INTERNATIONAL STUDIES**

Source: Adapted from Palmer, Ziegenfuss and Pinsker (2004)

Based on results it can be considered that the 09 variables considered prioritized in studies of accounting entities 04 do not appear in research results about the management accountant in Brazil. Variables not considered by respondents were: communication, interpersonal relationship, capacity to solve problems and information technology.

Except for information technology a skill the need for which seems to us to already be fully incorporated by accounting area professionals, such view shared by Palmer, Ziegenfuss e Pinsker (2004) the other variables are behavioral and may have a strong relation to the type of function performed in Brazil or even the profile of the trained professional in relation to other countries or regions (USA and Europe) basis for entity researches.

In spite of it, it must be considered that variables such as listening effectively, self-control and outside relationship that in a certain way covers behavioral questions and may be considered part of a specific profile of this specialty in Brazil, this is due to the strong influence of Brazilian legislation and national culture.

Another question might be related to the objective of researches conducted by accounting entities where the objective is the general accountant and not a specialty except in the case of IMA research that is for a management accountant that covers all research variables, which therefore does not justify the differences. Methodological and statistical limitations adopted in this research also must be considered as result and comparison limiter.

**Question 3: Among presented competences are there competences that must be prioritized in the management accountant's development?**

Based on research and discussion data about the existence or not of competences to be prioritized in the development of the professional, H1 hypotheses of the study supported on average tests.

Hypothesis 1: There is a significant difference in the importance assigned to a certain competence in relation to the others.

For the average test, Kruskal-Wallis test was used, considered quite efficient for this kind of study, where two or more samples coming from the same population of different populations are tested. The test basis is the difference between importance evaluation averages for competence variables among male and female accountants that answered the question. The fact of using men and women is related to the references made in the studies of Loft (1992) and Anderson, Johnson and Reckers (1994) about the female management accountant's perception on the profession aspects where different views are identified, which also might be identified in this paper. Based on this test, considered null hypothesis is that there is no statistically significant difference with respect to assignment of the variable among groups formed by men and women.

Competences	Chi-Square	Degrees of Freedom	Level of Significance
Analytical	0.387	1	0.681
Self-control	1.357	1	0.343
Interpersonal communication	0.304	1	0.641
Attitude / endeavor	6.426	1	0.014
Strategy	1.298	1	0.355
Control Tools	0.276	1	0.720
Legal	0.004	1	0,862
Information Technology	1.233	1	0.324
Integrity and Confidence	1.357	1	0.342
Accounting and Finances	0.022	1	0.934
Interpersonal relationship	0.436	1	0.591
Listening Effectively	2.930	1	0.081
Capacity to solve problems	1.817	1	0.189
Planning	2.563	1	0.131
Management Techniques	3.484	1	0.055
Leadership / teamwork	0.334	1	0.563
Information Management	1.783	1	0.194
Outside Relationship	1.923	1	0.191

**CHART 3: KRUSKAL-WALLIS TEST RESULT**

Source: Prepared by authors

With a  $< 0.05$  level of significance, it is seen that there is no different between respondents coming from the 02 groups: men and women, except regarding attitude/endeavor

variable. Therefore, the null equality of averages hypothesis cannot be rejected, concluding that sub-samples had no influence on general study results. Considering the data it is seen that not even variables held in literature as prioritized by the study conducted by Palmer, Ziegenfuss and Pinsker (2004) with accounting entities' researches White Paper (1999), AECC/AAA (1990), IMA (1996 and 1999) and IFAC (2003) in general were considered relevant, see table 8. Among these variables the only one considered liable to priority is attitude and endeavor, which on its own could not be considered relevant. This fact despite still being initial can be analyzed as an indication of management accountants' competences form part of a common structure and not isolated competences that must be individually improved. This kind of analysis starts to be done reaching still embryonic results such as Cardoso and Riccio's (2005) study.

## 5. CONCLUSIONS

Understanding which competences are required by the management accounting professional may help the growth and development of this function in organizations, always having as an assumption the importance of people in value generation for the institutions. The study had as main results the definition of Brazilian management accountant's competences from the collocation of the 18 variables collected in literature, which submitted to the evaluation of 200 respondents, reached the 12 variables organized in 03 factors: technical competences, behavioral competences and posture competences. After this analysis, the study sought 12 found variables to competences held as prioritized by the main studies in the area, leaving out communication, interpersonal relationship, capacity to solve problems e information technology competences, demonstrating that in the behavioral aspect there may be posture differences between the Brazilian professional and the others that must be better understood and discussed. At last, it was reached from the average test that over 18 mentioned competences only attitude competence can be considered liable to be prioritized, which actually cannot have a priority meaning perhaps indicating that competences are more important in all than in the individual scope. It must be considered that some findings reported in this study are limited to the current research development stage of the accountant and management accountant competencies. However, it must be considered that some contributions both in the methodological field and in the theoretical implications of the management accountant competence study.

The limitations of this study are related to the intentional and not probabilistic sample, which does not allow any kind of generalization. Another question are the limitations

themselves of the factorial analysis as in the case of choosing the number of factors and disregard in the research drawing of important factors to construction of the generic model, such human resources policies related to specific aspects of each organization. Some points for future researches are raised with this kind of study, among them we can highlight the understanding of the differences between the Brazilian professional and the other, involved cultural aspects, origin of the profession and other aspects. We can also study the predictive validity of the model in longitudinal studies and comparative studies among countries.

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