Impact of programs on competency, career, and income on management graduates

Roberto Brazileiro Paixão[a,*] and Márcio Arcanjo de Souza[a]

[a]*Universidade Federal da Bahia, Salvador/BA, Brazil*

Abstract

Purpose – This paper aims to evaluate the impact of Federal University of Bahia's Business Administration graduate programs on graduates' competency, career and income development.

Design/methodology/approach – It is a descriptive study, for which a survey was applied and the data were analyzed using quantitative techniques (descriptive analysis, factorial analysis, t-test, Mann–Whitney test and regression analysis). Data collection was conducted through an electronic questionnaire sent to the graduates in the period between 1998 and 2012.

Findings – The results show that in general, the research participants perceive competency, career and income development after the course. At the same time, a comparison between the graduates of academic and professional axes (courses) was carried out, and in general, there is a certain similarity between perceptions.

Originality/value – This research contributes to the theoretical field on evaluation of graduates, both from a methodological point of view, because of conducted statistical analysis that is complementary to other methods used, and from a practical point of view, as it offers redesign and improvement elements to the program's curricula and teaching-learning methodologies so that it can maximize competency development, career and income of graduates.

Keywords Competencies, Career, Graduate, Income

Paper type Research paper

1. Introduction

The twentieth century was characterized by intense social, political and economic transformations, which changed the basis of relations among capitalist organizations, workers, who are then seen as a source of intellectual capital, and educational institutions, which develop this human capital (Bartlett and Goshal, 1997).

The development of the competencies demanded by the labor market leads to the adaptation of educational institutions to the notion of competency. Thus, institutions have shaped their educational courses and programs aiming to develop in their graduates the key competencies they will need in the world of labor, as well as for life in society.

However, it is necessary to consolidate perceptions of what the real effectiveness of these institutions is when providing the conditions for competency development. One way to achieve this consolidation would be through the evaluation of graduates' perception (Donald and Denison, 1996; Zlatkin-Troitschanskaia *et al.*, 2015) on their participation in a specific

educational program and the subsequent impact of that on their personal life through career development and income.

In this context, the main objective of the research is to analyze the perception of the impact of *stricto sensu* graduate programs on administration at the Federal University of Bahia (UFBA) on graduates' competency, career and income development. These programs are divided into two axes:

(1) the academic one, composed by academic master's degree and PhD programs; and

(2) the professional one, which comprises the professional master's degree.

The time frame covers graduates between 1998 and 2012.

During this period, there was an increase of approximately 222 per cent in the number of Brazilian graduate programs on Business Administration, 125 per cent in the number of enrolled students and 296 per cent in the number of graduates (Capes, 2013). In this context of expansion of the teaching of Business Administration, the relevance of this research lies on the measurement of the achievement of the objectives of the programs and on obtaining information about graduates' professional positions. Besides, it contributes to the enrichment of the theoretical field on the evaluation of graduates.

This paper is structured in five parts: this introduction; the theoretical framework on competencies, career and income; the description of the methodological procedures; the result analysis and conclusions.

2. Theoretical framework

2.1 Competencies

Competency development has been discussed under various approaches in literature. In this sense, during the past decade, an approach has emerged, which seeks to determine the role of educational institutions, with emphasis on *stricto sensu* graduate programs, regarding the development of competencies by graduates.

To measure the impact of the programs they offer, educational institutions have given increased importance to mechanisms that allow capturing students' perceptions regarding the learning process (Baartman and Ruijs, 2011; Zlatkin-Troitschanskaia *et al.*, 2015; Bleiklie *et al.*, 2017; Caspersen *et al.*, 2017).

Students' perception is related to metacognition, in which students, through a realistic perception of their own strengths and weaknesses, should direct their learning process (Baartman and Ruijs, 2011).

The information obtained through the survey on students' perceptions provides strategic resources that can assist in the continuous improvement of programs. Several decisions can be made by graduate programs based on this information, such as curriculum structure, program content, the role of the faculty, teaching methodologies, support services for students and management information to support institutional planning and resource allocation (Donald and Denison, 1996; Halász, 2017).

Thus, the issue of competencies permeates the way the education program itself is designed and organized, having a direct impact on students' learning. International cooperation agencies, such as the Organization for Economic Cooperation and Development (OECD), have contributed to this change in educational guidance. According to Rychen and Salganik (2005), the OECD Definition and Selection of Competencies Project has collaborated with a wide range of institutions, researchers and experts in identifying a set of key competencies, which should:

- contribute to valuable results for society and individuals;
- help individuals meet important demands in a wide range of contexts; and
- be important not only for work but also for all individuals.

Another phenomenon that has contributed to an ever-greater inclusion of competencies in the conception and design of the programs is the unification of educational assessment systems. In recent years, these systems have been increasingly integrated and hierarchical, standardizing the offer of programs (Bleiklie, 2005). On the one hand, this can ensure minimum quality standards, on the other hand, it can remove part of the institutional autonomy and hinder innovation in the proposal of the program.

Given the orientation tendency of educational programs to include competency development (Douglass *et al.*, 2012), there is a transformation in the roles of institutions, teachers and students, which can be characterized by the following aspects:

- The teaching culture is replaced for formal and informal learning culture (Barth *et al.*, 2007).
- Curriculum and assessment are competency-oriented (Mulder *et al.*, 2009).
- Students take greater responsibility for the development of their own competency (Barth *et al.*, 2007).
- Students learn through practice and the teachers act more as coaches than as teachers (Dall'Alba and Sandberg, 1996).
- Learning how to do can hardly be transferred from the teacher to the student (Baartman and Ruijs, 2011).
- The educational process becomes more student-centered and less directed by the teacher (Mulder *et al.*, 2009).
- The learning process becomes a competency development process for students and teachers, though at different levels of experience (Rychen and Salganik, 2005).

This set of changes aims to train individuals with the ability to adapt to changes occurring in the personal and professional spheres through the development of competencies that combine both technical knowledge and subjective characteristics (Barth *et al.*, 2007; Baartman and Ruijs, 2011).

However, there is criticism regarding the focus of the competency-based education system. The main existing criticism concerns the gap between the knowledge that is offered by the programs and the actual needs of the market (Mihail and Kloutsiniotis, 2014). Thus, there is a gap between the practice of work and what is taught in educational institutions, which needs to be narrowed down.

One of the factors contributing to this gap, the emphasis on the development of analytical skills rather than problem-solving, is explained by the fact that graduate programs have used teaching and learning methods that break down knowledge in an attempt to make it more instrumental and accessible to students. Cornuel (2005, p. 820) complements saying that "students are being prepared to consistently play familiar situations and commonly used organizational settings".

Bartlett and Goshal (1997), in turn, argue that, hardly ever, training and development activities can change deeply rooted personal characteristics, although they are appropriate to develop knowledge and experiences that provide the individuals with tools to use their personal attributes.

Evidence extracted from studies in the areas of intelligence, social psychology and organizational behavior have pointed out the same empirical fact that non-cognitive competencies, such as self-control, empathy and interpersonal relationship management, have increasing influence upon work performance, career and income (Deng, 2010).

The latent question is whether management education programs can, through the used teaching and learning methodologies, develop these non-cognitive competencies in their students or just instrumentalize them through specific knowledge and skills within a professional field. In this sense, Mihail and Kloutsiniotis (2014) found out that graduates of an MBA course in Greece developed specific or technical skills (hard skills) more effectively than interpersonal or non-cognitive skills (soft skills).

The above criticisms lead us to infer that although competency is part of the discourse of educational management, an adequate teaching structure is required to allow that the full development of the students actually takes place. In turn, students, facing a context of increasingly rapid change in production structures and labor markets, have demanded such programs, expecting to develop the necessary competencies to ensure their employability.

Nonetheless, studies have achieved relative success in trying to measure the impact of management education programs on competency development. Hilgert (1995) found out that the graduates of the Executive Master's Program in Business Administration from Claremont Graduate School in California (USA) regarded having gained a new understanding of work, skills and competencies.

Baruch and Peiperl (2000) evaluated a group of MBA graduates who were working in four companies in the UK, comparing them with their colleagues in the same hierarchical position who did not have an MBA. To establish the said comparative, the authors used a scale composed of 18 skills and abilities. The results show that those who had an MBA performed better in all the competencies assessed by the study. That way, earning an MBA would help students gain an advantage over their peers, at least in self-assessment.

A similar methodology was used by Sulaiman and Mohezar (2008) who used a scale composed of 15 skills and abilities, as well as evaluating aspects related to satisfaction with the program, such as curriculum, teachers, infrastructure, program coordination, support services, selection processes and career-oriented services. Regarding skills, graduates evaluated their proficiency before and after the course, and in all, the mean scores after the course were higher than those identified before the course. The survey, which was conducted in Malaysia, revealed that people who have an MBA in their curriculum and over five years of professional experience are promoted faster. The same authors have further identified that among the main motivations for undertaking an MBA are career advancement, job or career change and becoming an entrepreneur.

However, Pfeffer and Fong (2003) point out that although there are studies that identify positive effects for graduates of management education programs, they may be analyzed by an alternative way, that is, it may be that student's individual competency is being evaluated rather than the domain of specific knowledge.

Thus, it appears that the inclusion of the concept of competencies in the pedagogical project of the programs (Mulder et al., 2009; Halász, 2017) is required to meet the demands imposed by the dynamics of the labor market. However, it is necessary to have a process of reflection upon the incorporation of the concept of competency within the design of educational projects, both regarding the offering of structural conditions that allow the development of the required competencies and regarding the fact of not restricting the focus on this goal alone.

From the development of these general competencies, the individual would be able to perform activities not only in one or multiple professional contexts but also for life in society. Thus, it is guaranteed to the individual value in the labor market and social value.

2.2 Career
Studies have aimed to identify and measure the relationship between the management education offered in graduate programs in Business Administration and career development. In this sense, the results have been quite controversial, ranging from studies that found positive impact (Ashelfelter and Rouse, 1998; Bennis and O'Toole, 2005; Wood and Cruz, 2014) to those that establish severe criticism to the relevance of what is taught and produced in business schools for professional practice (Mintzberg and Gosling, 2002; Pfeffer and Fong, 2003; Bennis and O'Toole, 2005).

In the field of criticism, Mintzberg and Gosling (2002) point out that curricula have become irrelevant as they focus on the rigor of scientific research, which, in turn, has little basis in real business practices. Management is a practical activity and educational institutions have contributed little to managerial practice and thinking (Pfeffer and Fong, 2003). That is, having a management education degree might serve as a good credential, but it does not necessarily represent domain of knowledge in business administration, as graduates have difficulty in applying the acquired knowledge in a practical situation involving uncertainties and risks (Vazquez and Ruas, 2012). Bennis and O'Toole (2005), in turn, point out the need to seek scientific rigor and practical relevance.

Mihail and Kloutsiniotis (2014) demonstrated through a survey carried out in an MBA course in Greece that the benefits related to progression to higher hierarchical levels are not immediately visible and may depend on the prestige of the institution where the program was held. On the other hand, the same study shows that having an MBA contributes for graduates to succeed in getting jobs with greater responsibilities and it plays the role of a distinctive factor when being hired.

With regard to the studies that display a relationship between management training and career development, Wood and Cruz (2014) report the existence of a theoretical current called "speech of instrumental defense," which has found results demonstrating the impact caused by the Administration graduate programs on graduates' career development. Among these results, the main ones are:

- perception of superior performance by graduates having an MBA in relation to the ones who do not have the same degree;
- employability increase;
- rising to senior positions, after the completion of the program;
- job change;
- opening of own businesses; and
- increase in the percentage of companies seeking professionals with an MBA.

Faced with the opposition of theoretical perspectives, regarding the impact of graduate programs in Business Administration on their graduates' career, this research aims to contribute to the ongoing discussions in the field and might offer new evidence of such impact.

2.3 Income
A dichotomy similar to the one present in the discussions on the impact of training in the management area on competency and career development is present in the development of income.

A study in the USA carried out by the Graduate Management Admission Council revealed that graduates who had finished the program for seven years or more had higher

earnings than those who did not have the same qualification or those who had dropped out (Pfeffer and Fong, 2003). At the same time, Ashelfelter and Rouse (1998) argue that education enables the development of skills that increase individual productivity. Productivity, in turn, is reflected on income. Thus, we can infer that education is a determining factor in the perception of higher wage gains. In Greece, more than half of the graduates of an MBA program claim to have obtained wage increases after the end of the program, even in the crisis scenario which the country has experienced in recent years (Mihail and Kloutsiniotis, 2014).

According to another current, American studies indicate that there is a direct association between more years of schooling, on average, and less inequality in the USA, saying that the higher the average level of education in a country, the greater the income distribution. This is a result of the fact that the increase in highly qualified workers puts pressure on wage differences (Duman, 2008). However, even countries with the highest average years of schooling have high levels of income inequality.

Although there is income increase for those who have more years of schooling, such evolution might not just be the result of obtaining higher levels of education. Other elements such as the origin and level of education of family members and students' personal characteristics might influence the income. Ashelfelter and Rouse (1998) conducted a survey aimed to collect evidence about the return of education for people from different family backgrounds and different abilities measured through intelligence quotient. The result is that people with higher skills would receive higher wages even if they had not received additional education. In this case, the link between income and education might be disguised, caused by the fact that people with higher capacity negotiate their (innate) abilities in the labor market better. The researchers also found out that returns to education have strong family bias, i.e. individuals whose family members have more education tend to have higher education and income as well.

In the model proposed by Michael Spence, most educated individuals have higher income just because education is a sign of greater capacity (Spence, 1973 apud Deng, 2010). Thus, the correlation between education and earnings may be the result of an omitted variable, probably the individual's ability, which influences both education and wage. In fact, the existing discussions in the literature revolve around the treatment of these two concerns:

(1) how to quantify ability apart from other variables, and

(2) the choice of instrumental variables to filter schooling (Deng, 2010).

3. Methodological procedures

This is a descriptive and quantitative (survey) research. A composed structured questionnaire was developed, displaying five parts: general impact; competencies; career; income; and sociodemographic data.

With regard to the so-called "general impact" dimension, there is a question on the type of program (academic or professional) and three other issues on which we intend to evaluate, through a seven-point Likert scale (in which 1 is "I strongly disagree" and 7 corresponds to "I completely agree"), the perceived general impact of the program on competencies, career and income (for instance: Did having done the program have a positive impact on my competencies and skills?). The same was done for career and income. These were general questions, based off of general literature, regarding the impact of MBA.

Regarding the "competency" dimension, we listed competencies for graduates to determine the degree in which they have been developed by the program. A similar scale was also used, seven-point Likert scale. The measured competencies are those proposed by

Baruch and Peiperl (2000) and Sulaiman and Mohezar (2008). This choice was made because these authors, together, gathered a wide range of competencies to be analyzed, which already represented a compilation of the literature. The skills listed by Baruch and Peiperl (2000) were identified through focus groups with students and teachers with industrial experience. Sulaiman and Mohezar (2008) lists were compiled from previous studies, notably on Bruce and Egington's (2003) work.

The "career" dimension is meant to measure the weight assigned to the program on career development and to evaluate the hierarchical position during the program and currently. This dimension consists of five questions:

(1) a question in a categorical scale, yes or no, to assess whether the respondent perceives that the program had an impact on his/her career;

(2) a question to verify the weight that the program had on career development;

(3) the hierarchical level during the program;

(4) the current hierarchical level; and

(5) a question to verify whether the respondent had professional experience outside of Bahia after the program and where the experience took place (the latter not used in this work).

Questions relating to hierarchical level, during the program and currently, are based on research by Heaton *et al.* (2000) and Hilgert (1995), with the necessary adjustments to meet Brazilian reality. The other questions were designed by the authors.

The "income" dimension evaluates the importance given to the program on income development, also checking the perception of income during the program and currently. Just as the previous dimension, there is a question in categorical scale, yes or no, to assess whether the respondent perceives that the program had an impact on income, a question to verify the importance that the program had on a possible income development (Likert scale) and the salary range during the program and currently. The questions concerning salary range are also based on the theoretical framework by Heaton *et al.* (2000) and Hilgert (1995), with the necessary adjustments. The other questions were made by the authors.

Finally, the dimension related to "sociodemographic data" seeks to characterize the respondents according to age, gender, training area, area of operation and whether he/she performs an academic activity.

A pre-test of the tool was conducted, prior to the collection, with a small sample of graduates to refine and validate the questionnaire according to the research objectives. The questionnaire was applied electronically through the use of the survey monkey platform.

The sample of elements to perform data collection comprised graduates of *stricto sensu* Business Administration programs, from academic and professional axes of courses (academic MBA and professional MBA), of the UFBA between 1998 and 2012. The choice of this 15-year timeframe is because of the fact that the Professional Master's Program in Business Administration at UFBA was created in 1998; thus, it was intended to encompass all the students graduated in this modality and in the academic axis during the same period. This sample is characterized as non-probabilistic given the availability of graduates' contacts to the Coordination of the UFBA Administration Graduate Center. Thus, it is not possible to generalize the results in the universe of graduates of the programs (Hair *et al.*, 2005).

Because of the extension of the research and the limitations regarding the consolidation of the graduates' contact data, the collection took place in two different occasions. The first occasion was the realization of the collection from the graduates with professional master's

degree, which comprised 342 students between 1998 and 2012. Questionnaires were sent by email between October and December 2012, resulting in a total of 142 respondents (36.26 per cent response rate). The collection of the academic program axis, in turn, took place between April and July 2014, and it comprised 228 graduates, with 106 completed questionnaires (46.5 per cent response rate).

In both collections, there was a considerable effort to try to get the highest possible response rate. This effort was necessary to minimize a possible non-response bias effect. So, the first step was to perform the update of the database with the information of the graduates. This update was conducted through e-mail, phone calls, in cases in which the e-mail was outdated, and research in the Lattes Platform and the Web through search devices. Once the contact information was updated, questionnaires were sent, resent every fifteen days for those who had not responded to the survey, within the above-mentioned period for both collections.

The tabulation, processing and analysis of data obtained through the questionnaires were developed through statistical techniques (descriptive analysis, factorial analysis, t-test, Mann–Whitney test, and linear regression modelling), performed using SPSS software, to obtain results that enable the achievement for the objective of the research.

4. Analysis and discussion

The main information relating to the characteristics of the sample according to gender, age, education and professional business sector is as follows:

- 57.3 per cent of respondents are from the professional axis and 42.7 per cent from the academic axis;
- 61 per cent are male;
- 42 per cent are aged between 36 and 45 years;
- 42 per cent have a degree in Administration;
- 40.2 per cent worked in the private sector before the program and 44.7 per cent worked in the public sector after the program;
- 51 per cent had some work experience outside of Bahia, and in 29 per cent of cases, the experience was abroad; and
- 48 per cent exercise teaching activity, and of these, 87 per cent teach in the levels of undergraduate and specialization.

In the "competency" dimension, the first item asked the respondent to position him/herself regarding the following proposition: "Having done the program had a positive impact on my competencies and skills." The answers ranged from the minimum to the maximum point, i.e. from 1 to 7, with the central tendency of the sample (mean = 6.246; and median = 7) demonstrating strong perception of competency development by graduates.

Later on, respondents were shown a list of competencies, based on the theoretical framework by Baruch and Peiperl (2000) and Sulaiman and Mohezar (2008) to evaluate, according to their perception, to what extent the program had an impact on the development of these specific competencies.

Table I shows the descriptive statistics for the 32 common competencies of the research questionnaire, displayed following a descending order according to their average. It is noteworthy that the "n" of the sample regarding competency items is 226 (22 did not answered).

Competencies	n	Mean	Median	SD	Minimum	Maximum
Carry out research in the Administration area and correlated áreas	226	6.17	7.00	1.236	1	7
Think critically	226	5.98	6.00	1.272	1	7
Integrate information from various sources	226	5.92	6.00	1.169	1	7
Read	226	5.72	6.00	1.522	1	7
Think analitically	226	5.69	6.00	1.327	1	7
Analyze contexts and environments with diferente configurations	226	5.63	6.00	1.393	1	7
Express myself through writing	226	5.61	6.00	1.457	1	7
Analyze complex issues within organizations	226	5.49	6.00	1.503	1	7
Sensitize myself in relation to the organizational context	226	5.48	6.00	1.530	1	7
Think strategically	226	5.38	6.00	1.510	1	7
Adapt myself to change and/or new situations (flexibility)	226	5.14	5.00	1.514	1	7
Think abstractly	226	5.13	5.50	1.613	1	7
Interact with diferente sectors of society	226	5.12	5.50	1.547	1	7
Formulate strategies, policies and intervention plans	226	5.12	6.00	1.634	1	7
Express myself orally (speech)	226	5.11	5.00	1.443	1	7
Monitor and evaluate results	226	5.00	5.00	1.656	1	7
Take risks and initiative (self-confidence)	226	4.98	5.00	1.626	1	7
Manage time	226	4.97	5.00	1.600	1	7
Make decisions	226	4.92	5.00	1.550	1	7
Sensitize myself in relation to other cultures	226	4.88	5.00	1.680	1	7
Work in group	226	4.88	5.00	1.685	1	7
Deal with people (interpersonal)	226	4.88	5.00	1.520	1	7
Be ethically aware	226	4.82	5.00	1.861	1	7
Solve problems criatively	226	4.82	5.00	1.563	1	7
Plan my career	226	4.81	5.00	1.698	1	7
Be proactive	226	4.77	5.00	1.744	1	7
Manage organizational change processes	226	4.74	5.00	1.727	1	7
Implement/manage projects	226	4.69	5.00	1.663	1	7
Negociate	226	4.59	5.00	1.682	1	7
Have quantitative skills	226	4.46	5.00	1.692	1	7
Lead people	226	4.42	5.00	1.590	1	7
Control myself emotionally	226	4.21	4.00	1.662	1	7

Source: Own elaboration (2014)

Table I.
Descriptive statistics
of competency items

Thus, as for the general question, a strong perception of development of specific competencies is evident through the descriptive statistics. In comparison with studies that guide the theoretical approach, the data are similar to findings of these studies. The 18 competencies assessed by Baruch and Peiperl (2000) also achieved ratings above the average of the scale, and the average scores ranged from 4.02 (quantitative skills) and 5.54 (express myself through writing). We must specify that the metric used in Sulaiman and Mohezar's (2008) research is different from ours, because they used a five-point Likert scale. However, it is possible to see that the post-MBA evaluations were mostly above the average of the scale, except for two competencies: be ethically aware and sensitize myself in relation

to other cultures. It can be seen that the best and worst assessed competencies in both studies had similar performance in this research.

To make a comparison concerning graduates' perception of competency development in relation to the axis of the program, professional or academic, factor analysis was performed to reduce specific competencies to factors, facilitating comparison between these groups.

This study met the criteria pointed out by Hair *et al.* (2009) and Dancey and Reidy (2006): 226 respondents answered the questionnaire (greater than 100); seven observations were made per variable (226 respondents/32 variables), above the five indicated; the variables had factor eigenvalues higher than ± 0.4 (above ± 0.30); Bartlett's test of sphericity showed a significant result (χ^2 = 6,111.176 and sig. < 0.001), as well as the Kaiser–Meyer–Olkin measure of sampling adequacy (0.955); and most variables had commonalities greater than 0.5, with the exception of three, whose values, though below, were close to 0.5.

The varimax rotation was used with Kaiser normalization to factorial analysis, as this technique maximizes high correlations and minimizes low correlations among variables (Hair *et al.*, 2009). This procedure allowed the reduction of competencies to four factors, which together account for approximately 62.9 per cent of the total variance (Table II).

The four factors were named according to the competencies that have the highest load within the factor or according to the groups of variables that had some interrelation, receiving the following labels:

(1) *Factor 1*: Strategic thinking and decision-making.
(2) *Factor 2*: Interpersonal.
(3) *Factor 3*: Analysis of contexts.
(4) *Factor 4*: Research and information integration.

We then proceeded to the comparison of graduates' perception of the two axes, academic and professional (Table III).

Based on the data, it can be said that the perception of competency development is higher for graduates of the professional axis concerning Factors 1 and 3 (sig. < 0.05). As to Factors 2 and 4, it was not possible to say, statistically, that there is a difference in the perception of both groups. That is, the difference is only significant regarding competencies linked to strategic thinking and decision-making and competencies related to context analysis.

Regarding the career dimension, the first question sought to assess whether the respondent perceived any impact of the program on this dimension. Most respondents (83.5 per cent) perceived some impact higher than the average point of the scale concerning career development, with 54.4 per cent of respondents reporting that this impact was maximum (mean = 5.87; median = 7.0; standard deviation = 1.475; n = 224).

Afterwards, graduates were asked whether they consider there has been an evolution in their career after the program. Graduates should answer yes or no, and 89.7 per cent answered affirmatively.

Later, we tried to find out the weight that graduates attributed to the program regarding career development. The results indicate that graduates bind part of the development of their careers to the program (mean = 5.11; median 5.0; standard deviation = 1.726; n = 224).

The following questions sought to verify at which hierarchical level the respondent was during the program and currently. They were given eight choices of hierarchical levels. The frequencies of hierarchical levels and the percentage variation between the level during the program and the current level are shown in Table IV.

It is noticed that the largest concentration of graduates, during the program, is in Levels 3-5, representing approximately 71.5 per cent of the sample. Currently, we can see that the

Competencies	Factor			
	1	2	3	4
Think strategically	0.702			
Make decisions	0.667			
Implement/manage projects	0.632			
Monitor and evaluate results	0.626			
Formulate strategies, policies and intervention plans	0.617			
Lead people	0.616			
Solve problems criatively	0.604			
Take risks and iniciative (self-confidence)	0.580			
Have quantitative skills	0.553			
Adapt myself to change and/or new situations (flexibility)	0.530			
Control myself emotionallly		0.696		
Deal with people (interpersonal)		0.664		
Work in group		0.653		
Negociate		0.602		
Be proactive		0.560		
Express myself orally (speech)		0.510		
Plan my career		0.502		
Be ethically aware		0.455		
Manage time		0.437		
Analyze contexts and environments in diferente configurations			0.730	
Analyze complex problems within organizations			0.728	
Sensitize myself in relation to the organizational contexto			0.679	
Manage organizational change processes			0.640	
Interact with diferente sectors in society			0.564	
Integrate information from various sources				0.658
Comunicate myself through writing				0.634
Think analitically				0.609
Think critically				0.604
Read				0.507
Carry out research in the administration area and correlated áreas				0.454
Think abstractly				0.443
Sensitize myself in relation to other cultures				0.432

Source: Own elaboration (2014)

Table II.
Factorial analysis of
competency items

Factors	Groups	N	Mean	Median	SD	Minimum	Maximum	t-test	Signifcance
Strategic thinking	Academic	93	4.53	4.80	1.41	1	7	−3.56	0.001
and decision-making	Professional	133	5.14	5.40	1.17	1	7		
	Consolidated	226	4.89	5.10	1.30	1	7	–	–
Interpersonal	Academic	93	4.62	4.67	1.37	1	7	−1.54	0.125
	Professional	133	4.90	5.00	1.31	1	7		
	Consolidated	226	4.78	5.00	1.34	1	7	–	–
Context analysis	Academic	93	4.96	5.40	1.46	1	7	−3.20	0.002
	Professional	133	5.52	5.80	1.17	1	7		
	Consolidated	226	5.29	5.60	1.33	1	7	–	–
Research and	Academic	93	5.65	5.75	1.04	1	7	0.11	0.913
information	Professional	133	5.63	5.88	1.02	1	7		
integration	Consolidated	226	5.64	5.88	1.03	1	7	–	–

Source: Own elaboration (2014)

Table III.
Descriptive statistics
of competency
factors

concentration is more pronounced between Levels 4 and 7, adding up around 84.1 per cent. This might mean that there was a displacement of the sample to higher hierarchical levels. Analyzing the percentage variation of the levels, we see a decrease in the number of lower-level officeholders, and only the positions of board member and chairperson had positive variation in the number of individuals, which may indicate career development. In the research that guided the theoretical framework, we can observe similarity of results when compared to the data analyzed here. Hilgert (1995) noted that after the program, there was a reduction in the frequency of respondents who were between two and eight hierarchical positions away from the top of the organizational pyramid (chief executive officer). On the other hand, there was an increased frequency of those who were distant only one hierarchical position or who were at the top position in the organization. Heaton *et al.* (2000), in parallel, reported a reduction in the number of unemployed people, as well as the reduction in the number of respondents in junior and middle management positions. In contrast, they found an increase in the number of holders of senior management positions, board members and business partners.

With the listing of categories, it was possible to calculate for each graduate the variation regarding number of hierarchical levels. Based on the distribution of variation frequencies of hierarchical level, we could group respondents into three categories:

(1) those with negative variation, i.e. whose hierarchical level declined after the program;

(2) those who had no variation, i.e. who remain in the same hierarchical level they were at the time of the program and;

(3) those who had positive variation, i.e. who are at higher hierarchical levels after the master's program (Table V).

Hierarquical level	During the program		Currently		(%) variation
	Frequency	(%)	Frequency	(%)	
1. Operational	12	6.3	10	5.3	−16.67
2. Assistent	8	4.2	3	1.6	−62.50
3. Supervision	8	4.2	4	2.1	−50.00
4. Analyst	44	23.3	33	17.5	−25.00
5. Coordenation	41	21.7	29	15.3	−29.27
6. Manager	50	26.5	46	24.3	−8.00
7. Board	25	13.2	51	27.0	+104.00
8. Chairperson	1	0.5	13	6.9	+1,200.00
Total	*189*	*100.0*	*189*	*100.0*	

Source: Own elaboration (2014)

Table IV.
Frequency of hierarquical levels during the program and currently

Grouped varaiation	Frequency	(%)	Cumulative (%)
Negative	17	9.0	9.0
None	80	42.3	51.3
Positive	92	48.7	100.0
Total	189	100.0	

Source: Own elaboration (2014)

Table V.
Grouping of respondents by type of variation in hierarchical level

It has been found that more than half of the respondents had no or negative variation in career, whereas 48.7 per cent had positive variation.

After making the overall assessment of the respondents, we proceeded to the analysis to verify whether the perception of career development is the same between graduates of the academic and professional axes (Table VI).

Despite the apparent trend toward greater perception of development by graduates of the professional axis, the Mann–Whitney test was performed to verify whether the difference is significant. Although the proportion of graduates of the professional axis who perceived positive variation in career was greater than the graduates of the academic axis, it was not possible to say that this difference is significant (sig. = 0.470).

With regard to the "income" dimension, the first question aimed to verify graduates' perception in relation to the impact of the program on income. Out of the total respondents, 67.7 per cent said that the program had a positive impact on their income (responses higher or equal to five) and 34.3 per cent stated that this impact was maximum (Option 7), highlighting the contribution of the program to income increase (mean = 5.08; median = 6.00; standard deviation = 1.973; $n = 248$).

Later, graduates were asked if there was wage development after the completion of the program, and 80.3 per cent answered "yes." Based on this question, it was verified that graduates believe that the program had a weight ranging from moderate to slightly positive on income development, as the mean of the sample is near the average point of the scale and the median is one point above that (mean = 4.40; median = 5.00; standard deviation = 2.161; $n = 201$).

Regarding salary range, in which the respondents fell into during the program and currently, Table VII presents results showing a reduction in the number of occupants of the levels with income below R$7,000.00 and the increase in the number of respondents with income exceeding this level.

The variable salary range, categorical, was later transformed into a numeric variable by calculating the average point of each of the salary ranges. As it is not possible to calculate the average point of those earning above R$18,000.00 (US $5,486.00), respondents from this group were excluded from this analysis (55 according to the current income data). Thus, the salary range up to R$2,000.00 (US$610.00) had an average point of R$1,000.00 (US$305.00). The range between R$2,000.00 (US$610.00) and R$4,000.00 (US$1,220.00) had an average point of R$3,000.00 (US$915.00), and so the average points were obtained successively.

From the conversion of salary ranges into average points, a new variable was created to calculate the variation in income based on the difference between the average point at which the graduate was during the program and the average point at which he/she is currently.

Variation of hierarquical level	Academic axis		Professional axis	
	Frequency	(%)	Frequency	(%)
Negative	6	10.7	11	8.3
None	26	46.4	54	40.6
Positive	24	42.9	68	51.1
Total	*56*	*100.0*	*133*	*100.0*

Source: Own elaboration (2014)

Table VI.
Variation frequency of hierarquical level by program axis

Salary range	During the program Frequency	(%)	Currently (Frequency)	(%)	(%) Variation
Up to R$2.000,00 (US$610.00[1])	21	9.4	2	0.9	−90.5
Between R$2.000,01 and R$4.000,00 (US$610.01-1,220.00)	47	21.1	8	3.6	−83.0
Between R$4.000,01 and R$7.000,00 (US$1,220.00-2,133.50)	61	27.4	37	16.6	−39.3
Between R$7.000,01 and R$12.000,00 (US$2,133.51-3,657.00)	52	23.3	68	30.5	+30.8
Between R$12.000,01 and R$18.000,00 (US$3,657.01-5,486.00)	33	14.8	53	23.8	+60.6
Above R$18.000,00 (US$5,486.00)	9	4.0	55	24.7	+511.1
Total	223	100.0	223	100.0	

Source: Own elaboration (2014)

Table VII.
Graduates' salary range during the program and currently

It was noted that in the academic axis, most graduates had a positive evolution (82.4 per cent), and 64.9 per cent of the total had salary increase between R$2,000.00 (US$610.00) and R$7,000,00 (US$2,133.50), considering the average point of the income range.

As to graduates of the professional axis, it was found that about 68.08 per cent of the individuals had positive income increase and 50 per cent (47 individuals) had income development between R$2,000.00 (US$610.00) and R$7.000,00 (US$2,133.50), considering the average point of income range. It is inferred, therefore, that the perception of income development through the calculation of the average point of the salary range would be higher for graduates of academic axis than for graduates of professional axis.

Finally, a linear regression was performed to verify the significance of the average point variables during the program in relation to the dependent variable "average point of current income." We added the variables program axis, graduates' age at the time of graduation and time of completion of the program, as independent variables. The association between the dependent variable and the independent variables was considered moderate ($r^2 = 0.558$) (Table VIII).

Among the tested variables, only the average point of income during the program and the time of completion of the program present statistically significant results, thus revealing a positive correlation between these variables and the dependent variable (sig. < 0.001). Between these two variables, the average point of income during the program has a major contribution to the average point of current income, taking into account the standardized

Model	Non-standardized coefficients Beta	Standard error	Standardized coefficients Beta	t	Significance
Constant	6.052	1.434		4.219	0.000
Average point during the program	0.565	0.082	0.516	6.879	0.000
Age at the time of graduation	−0.041	0.038	−0.080	−1.082	0.281
Time of completion of the program	0.284	0.079	0.239	3.609	0.000
Program Axis	0.174	0.558	0.022	0.311	0.756

Source: Own elaboration (2014)

Table VIII.
Linear regression coefficients

coefficients (beta). For each increased standard deviation in the average point of income during the program, the average point of current income increases 0.516 standard deviation.

Obviously, it was expected to find a positive correlation between income during the program and currently, as the former is a starting point for the latter, from increased education and professional experience. Regarding the achieved results, which point to the fact that the longer the time of completion of the program, the higher will be the benefits to income, these are relatively satisfactory as they statistically expose phenomena that had already been proven in other studies (Pfeffer and Fong, 2003; Duman, 2008; Deng, 2010).

Regarding the results that were not significant, it was expected that the age variable presented a negative correlation with the average point of income after the program, given that the younger the graduate was, the greater the opportunities for growth in career, and consequently, in income. On the other hand, there are greater chances of an older graduate to have a stable career already and less sensitivity to changes that brought significant gains. However, it was not possible to prove these facts statistically in this study.

With regard to the "axis" variable, the non-significant result shows that we cannot state that the program (course) axis, academic or professional, interferes positively or negatively with the average point of income after the graduation.

5. Conclusions

From the results found in the general questions about the impact of the programs on the evaluated dimensions, as well as those found in specific questions of these three dimensions, it was observed that there is a perception on the part of graduates of the development of their competencies, career and income after participating in the *stricto sensu* Administration graduate programs at UFBA.

Regarding competencies, a strong perception of evolution was found by graduates, who considered that the program had a high impact on this development. The survey also showed that the 32 common competencies among the group of graduates of academic and professional programs can be grouped into four factors:

(1) competencies related to strategic thinking and decision-making;

(2) interpersonal competencies;

(3) context analysis competencies; and

(4) research and information integration competency.

This finding is important as it allows us to stratify competencies into groups or factors, which may be relevant to guide future research, and as far as this study is concerned, it facilitated a comparison analysis between groups.

A distinction in perception between graduates of academic and professional axes was found; the latter have a better perception of the development of competencies related to strategic thinking and decision-making and context analysis competencies. We can infer from this phenomenon that given the nature of the professional master's degree, there is a greater propensity for the development of competencies which require greater applied professional practice, which demonstrates a certain adherence to Mihail and Kloutsiniotis' (2014) findings, according to which MBA programs are more effective in the development of hard skills or technical skills. As to the other competencies, there was no statistically significant difference in perception.

With regard to career, there was also a decrease in the occupation of lower levels and an increase in the number of individuals being the chairperson or board member in the organizations where they work. Overall, 48.7 per cent of graduates have evolved in their

hierarchical positions, whereas 42.3 per cent remained at the same level. Nevertheless, a portion of these graduates considered to have obtained career development. This fact can be explained by what Heaton *et al.* (2000) refer to as career progression through task-assignment or lateral movements, which extend the experiences and opportunities and provide professionals with a sense of evolution, not necessarily implying vertical promotions. This argument is consistent with the Mihail and Kloutsiniotis' (2014) findings, in which graduates do not perceive great progress in terms of hierarchical levels, but they recognize that the MBA program helped them get jobs with greater responsibility. We could not find statistically significant differences in the perception of career development among graduates of academic and professional axes. Based on the results, this means that the programs have produced results between moderate and satisfactory in the work life of their graduates.

As to the "income" dimension, the results for perception of development are positive, although this dimension has smaller indicators than the perception of competency and career development. By observing the track during the program and currently, it has been found that there is a reduction in the number of individuals who made up to R$7,000.00 (US $2,133.50) and an increase in the number of individuals who gain above that. As it was observed about the career dimension, we could not verify any difference in the perception of graduates of academic and professional axes. We can observe the fact that graduates grant the program a moderate significance in the development of income.

The linear regression showed that research has a certain adherence to the literature that addresses the relationship among education, work experience and income, as it has proved a positive correlation between the time of completion of the program and the increase in graduates' income, although this correlation can be considered weak ($r = 0.284$). On the other hand, income after the program has not demonstrated a statistically significant correlation with age, meaning that the results are relatively the same for income after the program, independent of the graduate's age.

The measurement of the development of the triad composed by competencies, career and income, through an administration graduate program, is a topic that deserves thorough discussion. Thus, this research contributes to the theoretical field, both from a methodological point of view, as we used a statistical instrument for the treatment of data that had not been used in similar surveys up to date, and from the point of view of the findings by means of this methodology. However, these findings also raise new issues that can guide elements for future research.

Based on these results, it is important to point out some limitations of this research. The first identified limitation concerns the database used to obtain the contact information of respondents. As the timeframe of the research comprises 15 years, graduates' contact data were outdated. This limitation was overcome by checking the information contained in the database and conducting direct contact with respondents, requesting confirmation or update of the data in the program coordination records.

There were also limitations concerning the responses to the survey. First, it was necessary to ensure a satisfactory level of return. To do so, the survey was sent electronically, and reminders were sent periodically, and, ultimately, respondents were contacted by telephone. Thus, 248 responses were obtained in a universe of 570 possible ones, i.e. 43.5 per cent return rate, which constitutes an acceptable rate for a survey of this kind. Another problem regarding the return of the questionnaires relates to incorrect reporting of the survey. Clear, detailed instructions were sent along with the survey. Yet, there were such problems, but they did not invalidate the research results.

A third limitation concerns graduates' self-assessment of the impact of the program on competencies, career and income. Self-assessment is always influenced by the individual's subjectivity. There may be, for example, a tendency to positively evaluate the program as a means of not disqualifying their own academic background.

A final limitation refers to the homogeneity of the sample. As responses were obtained from graduates from 1998 to 2013, there is likely to be some influence of change in the profile of the respondents. Changes in the labor market over this period may also have influenced responses.

As a suggestion for further studies, we propose the use of a larger sample, using, for example, graduates of *stricto sensu* graduate programs from different institutions, geographic regions, sizes and market reputation. Another suggestion is to carry out research that includes a control group, i.e. conduct a study to evaluate individuals who have and who do not have a *stricto sensu* graduate degree. The use of others scales, especially on career success, such as Costa (2013), which uses objective and subjective aspects, could reveal other features about career development. This is relevant because an increase in the masters' graduate career sometimes is not an advancement in the hierarchical structure as within a conventional company, as part of the graduates end up being employed in educational institutions as professors. So, the career development could consider this Brazilian particularity of masters' career.

Note

1. 1 US dollar is approximately 3.28 BR Real (7h of august, 2017).

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*Corresponding author
Roberto Brazileiro Paixão can be contacted at: roberto.brazileiro@ufba.br