

The effect of training on the perception of individual performance: analysis based on training courses offered by the Federal Institute of Espírito Santo (IFES)

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Abstract

This article investigates if training courses offered to public servants improve their performance while fulfilling their duties. For this purpose, an Education Public Institution was chosen, whose buildings were expanded between 2008 and 2010, what caused increased workforce and creation of mandatory qualification for the new public servants through Institutional Familiarization. From a model of differences in differences, the training effect on individual performance of public servants that participated in training was estimated, with control via alterations in non-trained servants' performance and other heterogeneous characteristics. The results obtained suggest that the non-analyzed training had impact on public servants' individual performance, corroborating the hypothesis that training not necessarily increases performance.

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1 INTRODUCTION

Reforms promoted in the Public Administration of several countries resulted in the necessity of modernization of the public sector process and in the fostering of continuous personnel development (Bresser Pereira, 2010). Due to the rejection of the State interventionist role and to market globalization, it was necessary to search for references already experienced in private sector, adjusting the models for the reality of public sector, aiming at a more efficient management, through costs reduction and focus on obtainment of better results (Peci, Pieranti & Rodrigues, 2008; Klering, Porsse & Guadagnin, 2010; OCDE, 2010a).

In this perspective, around the world, the New Public Management system (NPM) has been orienting such reforms and promoting gradual advances by means of integration between political and administrative dimensions (Motta, 2013; Verbeeten & Speklé, 2015). Similarly, the Brazilian government promoted in 2005 the launching of the National Program of Public Management (GesPública in the Portuguese acronym) with the purpose of reaching more efficient results.

Such Program was followed, in 2006, by the institution of the National Policy of Development of Personnel (PNDP in the Portuguese acronym), which introduced the management by competences as managerial instruments of the continuous and permanent process of personnel development (Fonseca et al., 2013; Filardi et al., 2016).

In Brazil, despite these initiatives, there is evidence of lack of competences for the performance of functions, result of the absence of a modern system of personnel management (Järvalt & RandmaLiiv, 2010; Junior, Zouain & Almeida, 2014). Such evidence suggest a gap in relation to the effectiveness of strategic management of human resources, mainly regarding efficacy of personnel training (Salas et al., 2012; De Grip & Sauermann, 2012; De Grip & Sauermann, 2013), as expressed in the recommendations of the Federal Court of Accounts, on the control of public expenditure with personnel qualification (TCU Appellate Decision 866/2011– Full Court).

From these first recommendations, this article has the objective of verifying if the personnel qualification has contributed to supply the lack of competencies for the performance of functions in public institutions. The objective is to specifically investigate if the training courses offered to public servants promote improvement in the perception on the individual performance of their duties.

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The economic literature sometimes is conflicting regarding the effects of training on performance. Some studies show that investments may increase individual and organizational performance and bring benefits both for the worker and for the employer, given the development of competencies and the promotion of professional updating generated by training (De Grip & Sauermann, 2012; Verbeeten & Speklé, 2015). In this sense, training courses at the work place may result in effects on the productivity of the worker and will be support for organizations' growth (Ariga et al., 2013).

On the other hand, other authors affirm that not necessarily increased performance from training is observed (De Grip & Sauermann, 2013; Lopes & Teixeira, 2013). For such investments to show tangible results to organizations, the programs of training should be properly projected, and its implementation posteriorly evaluated (Patel, 2010; Salas et al., 2012). In this case, one indicates need to stipulate performance criteria that are in line with the training objective, in order to increase the efficacy of the training performed (De Grip & Sauermann, 2013).

For it to be possible to investigate the training effects on public servants' individual performance, the research corpus adopted was an Education Public Institution that went through a process of expansion of its educational unities between 2008 and 2010, which resulted in increased workforce and creation of mandatory qualification for all new servants – Institutional Familiarization (Familiarization).

Data related to the participation in Familiarization training courses and to performance evaluations were obtained on the Institution respective systems. Two groups were created, one to identify servants who participated in training courses (Treatment) and other with servants who did not (Control). From data of treatment and control groups, the effect of training on individual performance was estimated. The tests were controlled by other heterogeneous effects that could influence the individual performance, as self-evaluation, user evaluation, besides length of service at the Institution, age and gender. Corroborating the evidence existing in De Grip and Sauermann (2013) and Lopes and Teixeira (2013), the results obtained suggest that training has not impacted the performance of trained servants.

Thus, this article joints other studies on training in organizations that emphasize the necessity of stipulating performance criteria in line with training objectives, in order to increase the efficacy in training courses carried out (Patel, 2010; Salas et al., 2012; De Grip & Sauermann, 2013; Lopes & Teixeira, 2013). Specifically, this research is different from these pieces of work because it conducts the investigation considering training offered to public service workers, in which the incentives mechanism and the characteristics of the organizational environment are different from those used in private sector (Agrawal, 2013).

Among the pieces of research conducted in public sector, Mendez, Sepúlveda, and Valdes (2015) identified that training courses had positive association with workers' salary both of public and of private sector in developed countries. Brandão, Borges-Andrade and Guimarães (2012), in a study at a bank of mixed economy, found results that demonstrated hours of training may influence positively the organizational performance. Similarly, Amorim and De Barros Silva (2013) concluded that there was positive effect of training courses on performance under perspective of the servants from a Federal University.

This work differentiates from those studies by finding evidence that training not necessarily increases the public servants' performance. In this case, such result heed a warning to the necessity of guidelines stipulation, mechanisms of control, stimulus and incentive for the public servants not only participate in training courses but also apply and demonstrate its effects as counterpart to the resources invested that, for being limited, demand policies and management people practices effective and efficient.

2 THEORETICAL FRAMEWORK

2.1 Training and productivity in organizations

Human Resources Management (GRH) has gone through changes in its functions over the years and, gradually, has been playing strategic role in organizations (Coda & Coda, 2014). In addition to this scenario, it was verified that, after formal education, the training promoted at the work place is one of the ways to improve worker's performance, and, consequently, contribute to economic growth rates (Aguinis & Kraiger, 2009; Ariga et al., 2013; Fonseca et al., 2013).

In this context, organizations that invest in workers formation want to see sustainable behavior changes and competencies learning that assure competitive advantage (Salas et al., 2012; Ariga et al., 2013). Also in public service, these objectives are desirable, especially due to the resources limitation, which demands efficacy regarding GRH policies (Salas et al., 2012).

In developed countries, as the United States and the United Kingdom, studies indicate that training courses affect productivity and performance, both in private and in public sector (De Grip & Sauermann, 2012; Colombo & Stanca, 2014; Guerrazzi, 2016). It occurs because in these countries the labor legislation allows the existence of variable remuneration, including for public sector workers (Mendéz, Sepúlveda, & Valdés, 2015). At this point, we emphasize that the performance-related pay works as an incentive tool for learning and increased performance.

In the Japanese public service, for instance, according to Koga (2014), public servants' remuneration equate with private sector employees' salary, through correlation of workers' attributions, length of service and schooling. Thus, the same percentiles of wage increase or reduction are applied to workers' remunerations, from public and private sectors, according to the performance of the market and, as consequence, taxes collection, which, in the last instance, work as public resource source (Koga, 2014).

In countries as Brazil, one of the main issues of public service is the institutions characteristics and career plans, which do not allow the implementation of variable remuneration systems (Agrawal, 2013). In this case, even though in some functions the public sector pays, on average, higher values than the private sector does, attracting professionals with great potential, the lack of variable remuneration may be configured as lack of incentive and demotivation to the workers, jeopardizing these servants' efficiency and individual performance (Nakayama & Salott, 2014). In this context, public organizations tend to be under influence of the moral hazard, since the workers' performance, without proper incentive mechanisms, remains conditioned to personal motivations regarding the objectives of the same organizations (Klann et al., 2015).

Balsan et al. (2016), for instance, affirm that training alone cannot implement and sustain positive impact on performance, but that its association with post-training strategies may result in high positive impact on work. Besides, other studies suggest that managers should adopt attitudes that incentive workers' participation, creating favorable environments to the application of learning in the organizations (Chiaburi, Van Dam, & Hutchins, 2010; Salas et al., 2012; Mcnamara et al., 2012; Kumpikaité, 2015). In other terms, proper incentive mechanisms and an environment favorable to application of learning will provide the transfer of learning, which contributes positively to motivation and learning of individuals submitted to training courses (Grossman & Salas, 2011). Thus, there will be individuals willing to participate in training courses, and to the self-development at work (Martin, 2010; Salas et al., 2012).

Together with the issue of moral hazard caused by the lack or incentive policy inefficiency, literature indicates the necessity of development of planning and organizational environment management policies. It is because the success of the training does not only depend on the incentive mechanisms, but also on the quality of its program and context variable. The correlation between the variables of quality that give support to learning and performance at work, as analyzed by Balarini, Zerbin and Martins (2014), corroborate the necessity of conciliation of individual motivation, quality and incentives for the success of the training.

In this case, it is verified that training is not a single and isolated event, but a systemic process that, if well designed, shall work as stimulus to the various metrics of corporate well-being (Salas et al., 2012). Then, formulation, implementation and evaluation of training should be conducted from decisions adopted aiming at efficacy of training, under the point of view both of incentive mechanisms and of quality training and organizational environment.

Observed such situations, whether by the lack of improvement incentives or by the lack of quality at the environment and even regarding the training itself, it is possible that training does not have the effect on the improvement of performance of Brazilian public servants. From that, this research tests the following hypothesis:

H1: Training not necessarily has positive effect on public servants' individual performance.

3 METHODOLOGY

3.1 Sampling selection and model description

In order to be possible to investigate the effect of training on public servants' individual performance, a training course used by an Education Public Institution that went through expansion of its education unities, between 2008 and 2013, was used. Such expansion resulted in increased workforce and implementation of mandatory qualification for all new servants - Institutional Familiarization (Familiarization).

The population of the research involves servants with careers as Administrative Technicians – (TAE in the Portuguese acronym), performing their activities at several education unities of Federal Institute of Espírito Santo (IFES), submitted to performance evaluation according to program within the Career Plan. Data were collected on the systems of performance evaluation and Familiarization project, and structured in panel. The training data used refer to the Public Servant Development Courses (CDS in the Portuguese acronym). The project was elaborated according to the Guidelines of Decree 5,707/06, which instituted the National Policy for Personnel Development under the perspective of the model of strategic development of people (Brasil, 2006; Carvalho, 2009).

The project, executed between 2010 and 2012, had its objectives in line with the strategy of the Institution, in which professionals themselves of the organization acted as instructors, selected from knowing and competencies proven by curriculum on CNPQ Lattes platform. IFES is a favorable environment to implementation of the project, once, for being an educational institution, counts on a diversified specialist workforce, which allowed working with instructors connected to the variety of areas of knowledge approached in the training courses. In this period, 180 groups, 4,554 places and 2,430 training hours were offered, which represented some 70% opportunities of qualification promoted by the Institution in the period. All information related to the projects was made available on the Institution site (IFES, 2016).

The sampling was composed of a total of 4,818 evaluations observations, encompassing 1,493 evaluations observations of trained individuals (treatment group) and 3,325 observations of untrained individuals (non-treatment group). Among the untrained individuals, 1,931 observations referred to the evaluations of servants who joined the staff before 2008. Once the length of service may influence servants' performance, analyses were conducted comparing the trained individuals with: i) other untrained servants (non-treatment group); ii) all untrained servants that jointed the staff in the same period that the servants who received training. Besides, the length of service of each servant was controlled.

From the treatment and control groups, the followed model as used to verify the training effect on performance:

$$PEERS_{it} = \alpha_i + \mu_t + Training_i + Training_i \cdot Time_t + Control_{it} + \varepsilon_{it} \quad (1)$$

The variable $Time_t$ assumes values equal to 1 to performance evaluations after training and 0 otherwise. The variable $Training_i$ is a dummy group and assumes values equal to 1 for trained individuals (treatment group) and 0 for untrained individuals.

The variable $PEERS_{it}$ is the result of the grade attributed to the performance of individual i at the moment t by other servants from the same sector. Specifically, the evaluation conducted by the peers is a continuous variable and contemplates evaluations conducted by the other servants from the same sector. Such evaluation is obtained via application of an evaluation questionnaire to servants' peers, which has 10 affirmations about operational, organizational and behavioral aspects. A score of 5, 10, 15 or 20 is attributed to each point, corresponding to the indicator never, sometimes, almost always and always. In this case, the maximum score of the evaluation conducted by each peer is 200 points. The median of evaluations conducted by each peer about each servant i is used as performance evaluation made by the peers for this servant.

Moreover, they were controlled by heterogeneities associated to the servant's self-evaluation (self-evaluation), evaluation of the service user (User evaluation), and servant's age (Age), gender (Gender) and length of service (Length of service). Time dummies (μ_t) and work place dummies (campus) of each servant were included (α_i). More details on training and performance evaluation at the Institution researched and the controls used are exposed in the following subsections.

3.2 The training at IFES

The training course used in this research was Improvement I - Institutional Familiarization (Familiarization), instituted as mandatory qualification for all new servants from the edition of Resolution 14/2008 of the Institution's Board of the Director. Familiarization is composed of eight mandatory training courses, in which the servants should participate within up to 2 years and 8 months from taking office at the Institution (IFES, 2016).

Although mandatory, the participation in Familiarization was conditioned to the initiative of the servants themselves that, besides enrolling in the course also should make the enrollment request for each one of the eight training courses (Chart 1). The project did not foreseen the automatic enrollment; besides, it was not possible to predict the servant's availability to be absent from his/her workplace in order to participate in training courses on the dates offered.

To minimize this Familiarization limitation, according to the people in charge of the project, the training courses were offered in the education unities that compound the IFES (Chart 2), aiming at increasing servants' participation, mitigating displacements of servants to other unities, and even so, permitting the integration of personnel inter-unity, once the participation in the groups was not associated with the servant's work place, the places limit by group being respected. Besides, a same training course was offered as many times as it was necessary to attend the demand of the interested servants enrolled in the course.

Chart 1 - Improvement I - Institutional Familiarization

Improvement	Mandatory training courses	Course load
Institutional Familiarization	Institutional Documentation (8 hours)	100h
	Ethics Foundation (8 hours)	
	History of Federal Institutions of Vocational and Technological Education (EPT) and history of EPT in Brazil (12 hours)	
	General and specific educational legislation in EPT, public policies in EPT, and institutional pedagogical proposal (16 hours)	
	Specific Legislation (Law 8,112/90) – module I (16 hours)	
	Specific Legislation (Law 8,112/90) – module II (8hours)	
	Process Modeling (16 hours)	
	Rationalization of Work (16 hours)	

Source: <http://pse.ifes.edu.br/cds/site/> Access on July 27th, 2016

Chart 2 - Regions for training courses offer

Regions	Education Unities
Central region	Metropolitan Micro-region: Rectory and Cariacica, Guarapari, Serra, Vila Velha and Vitória Campuses
	Expanded South Metropolis: Piúma Campus
	Southwest Highlands: Venda Nova do Imigrante Campus
North	Linhares Complex: Aracruz and Linhares Campuses
	North Coast: São Mateus Campus
Northwest	Colatina Complex: Colatina and Itapina Campuses
	Central Highlands: Santa Teresa Campus
	Northwest 2: Nova Venância Campus
South	Cachoeiro Complex: Cachoeiro do Itapemirim Campus
	Caparaó: Alegre and Ibatiba Campuses

Source: <http://pse.ifes.edu.br/cds/site/> Access on July 27th, 2016

3.3 Performance evaluation at IFES

Instituted by Law 11,091 (Brasil, 2015) and regulated by Decree 5,285 (Brasil, 2006), the Program for Performance Evaluation compounds the Career Plan of Technical-Administrative Positions in Education (PCCTAE in the Portuguese acronym), approved by Board of Directors Resolution 11/2007 (IFES, 2016). The Program was proposed as instrument of people management, aimed at improvement of work quality, by which it would be possible to identify the integration of the servants with the Institution, besides identifying supervision issues (PCCTAE, 2007).

The performance evaluation was structured to contemplate three segments: the servant him/herself (Self-evaluation), the staff and the leadership (Hetero-evaluation) and the user (User evaluation). For each segment, forms to record the perception of the performance of the servant evaluated are used.

The self-evaluation (Self-evaluation) refers to the points attributed by the servant him/herself on her/his own performance. The hetero-evaluation (PEERS), attributed by consensus (median) between staff and leadership on the performance of the evaluated servant. In addition to the evaluated servant's leadership, at least more two servants participate of this perspective, who must be allotted at the same sector/management or top management than the evaluated servant. The user evaluation (User evaluation), in turn, refers to the median of points attributed by internal users of the service rendered by the organizational unity where the evaluated servant carries out his/her duties.

The performance evaluation occurs every nine months, from the servant's admission date, when the evaluated servant's performance is verified, attributing the scores 5, 10, 15 and 20, which correspond to the indicators never, sometimes, almost always and always. Each form has ten affirmations about operational, organizational and behavioral aspects. In this case, the scale used allows reaching maximum score of 200 points in each segment. It is necessary a minimum of 120 points in order for the servant to be considered able in the evaluation process, pre requisite for the concession of progression by merit.

Despite the attempt to approach the advanced model of evaluation of 360 degrees, in performance evaluation at IFES, the individual's objective mechanism of productive performance is not employed (Bégin & Vénard, 2013; Poister, Thomas, & Berryman, 2013). From this, it is possible to verify that, regarding the performance evaluation program, the aspects are evaluated from subjective perceptions of each one of the segments.

4 RESULTS

4.1 Descriptive statistics and tests of difference of medians

From data collection, one selected individuals that participated and did not participated in training courses in order to compare their results. The individuals were classified as trained and untrained. For this, a dummy Training variable equal to 1 was created for trained individuals and 0 otherwise. Descriptive statistic of variable observed in this study is in section A of Table 1 below. In Section B, there are the results of the tests of median differences for the variables used between both individuals groups.

In section A, it is verified that the oldest servants (41 years old on average) and those who present the greatest length of service (11 years on average) are among the untrained individuals. Among those who were trained, are the youngest (36 years on average) and who present the smallest length of service (3 years on average). The fact that younger servants, and those presenting smaller length of service, were majority in participating in training courses may be consequence of Familiarization having been instituted as mandatory for the new servants (IFES, 2016).

Table 1. Descriptive statistics and tests of difference of medians**Section A: Descriptive statistics**

This section presents the characterization of individuals regarding who was trained (treatment group) and who was not trained (non-treatment group) in relation to performance and other variables used in the study throughout the period analyzed. Definitions of the variable: PEERSit = result of the score attributed to the performance of individual i at the moment t by other servants from the same sector; Training = 1 for trained individuals, 0 otherwise; Self-evaluation = perception of the servant him/herself on his/her performance; Use evaluation = median perception on performance by internal users of the service; Age = servant's age; Length of service = servant length of service at the organization; Gender = 1 if Male and 0 if female.

Variable	Note	Not trained				Trained				
		Median	Standard Deviation	Min	Max	Note	Median	Standard Deviation	Min	Max
Peers	3325	192.99	15.85	48	200	1493	193.65	12.04	70	200
Self-Evaluation	3325	191.08	22.30	30	200	1493	191.82	16.42	33	200
User Evaluation	3325	184.59	24.81	18	200	1493	183.64	21.66	40	200
Age	3325	41.83	10.03	20	72	1493	36.28	7.56	22	64
Length of service	2752	10.78	8.81	0	31	1134	3.52	3.92	0	29
Gender	3325	0.5413	0.4983	0	1	1493	0.5077	0.50	0	1

Section B: Test of median differences of evaluations and other variables

This section presents the results of the test of median differences comparing trained servants (treatment group) with those who were not trained (non-treatment group) for the whole period analyzed.

Variable	Not trained		Trained		Difference	P > t
	Median	Standard Deviation	Median	Standard Deviation		
Peers	192.99	15.85	193.65	12.04	-0.6619	0.150
Self-Evaluation	191.08	22.30	191.82	16.42	-0.7453	0.247
User Evaluation	184.59	24.81	183.64	21.66	0.9501	0.950
Age	41.83	10.03	36.28	7.56	5.5465***	0.000
Length of service	10.78	8.81	3.52	3.92	7.2611***	0.000

Source: elaborated by the authors

*** It represents significative coefficients at 1%

Section B shows the results of the tests of median differences of the evaluations from both individual groups for the whole period analyzed. It is verified that, although there are differences between trained and untrained individuals in relation to age and length of service, both groups did not present significative differences in relation to performance medians when the whole sampling period is analyzed. In particular, such result is in line with the objective of Familiarization, which aimed at promoting introductory training to the new servants, in order for them to have better performance when fulfilling their duties.

Moreover, it is possible that the older servants, with greater length of service, in spite of being allowed to take the training voluntarily, maybe they do not have motivation to qualify themselves due to the proximity to retirement. In a study whose objective was to identify the effect of training hours with aspects of organizational performance (productivity, innovation rate and turnover rate), result of lower participation in training among older workers was obtained, whose the very nature of the relationship, for the researchers, was associated with variables as cultural context in which the organization was inserted (Mcnamara et al., 2012).

Such results suggest that, as in Sales et al. (2012), factors as workers' aging and presence of new generation at the work place with distinct motivations and expectations regarding learning demand from the organizations a different approach regarding the training plans proposed (Salas et al., 2012).

In the variable User evaluation, it can be observed greater variation between minimum scores (18 points on average), attributed to the untrained group, and maximum scores (200 points on average), attributed to the trained group. This variable captures the perception of organizational performance, once the score is attributed to the sector (De Melo & Santos et al., 2014; Denisi & Smith, 2014).

Table 2 presents complementary tests to the test of median difference for both individuals groups, using only data from before the performance of training courses, in order to mitigate issues of self-selection and verify that these individuals' performance before training was the same. It is observed that as the coefficient of the variable training was not significative, the performance of trained and untrained individuals was not different before training. Thus, trained and untrained individuals received the same median of evaluations before the training courses, which mitigates and minimizes issues associated with self-selection.

Table 2. Comparison of the treatment and non-treatment groups before training

$$PEERS_{it} = \alpha_i + \mu_t + Training_i + Controls_{it} + \varepsilon_{it}$$

Variable	Coefficient	Standard deviation	T	P > t
Training	-1.158	1.068	-1.08	0.278
Self-Evaluation	0.522	0.011	43.56	0.000
User Evaluation	0.035	0.010	3.28	0.001
Age	0.025	0.027	0.92	0.359
Length of service	-0.029	0.032	-0.92	0.358
Gender	1.881	0.378	4.98	0.000
Number of observations: 2845				

Source: elaborated by the authors

Notes: PEERS_{it} = result of the score attributed to the performance of individual i at the moment t by other servants from the same sector; Training = 1 for trained individuals, 0 otherwise; Self-evaluation = perception of the servant him/herself on his/her performance; User evaluation = median perception on performance by internal users of the service; Age = servant's age; Length of service = servant's length of service at the organization; Gender = 1 if Male and 0 if female.

This table presents results of the differences of performance of trained servants (treatment group) and untrained servants (non-treatment group), but considering only data from the period previous to training conduction. Specifically, such analyses allow minimizing the concerns about the bias of selection between groups of servants enrolled and not enrolled in the training course. For this purpose, the model below was used, which allowed being controlled also by other characteristics that may have affected the performance, such as servant self-evaluation, service user evaluation, and servant's age, length of service and gender.

4.2 Analyzing the treatment group – before and after training

Table 3 shows results of comparisons between individuals from the group that was trained (Treatment), considering observations of the whole period analyzed, before and after training. It is observed that, in principle, there was improvement in the performance of individuals after training. However, endogenous characteristics may have contributed to this improvement, since data from the control group that could eliminate such characteristics were not analyzed in this regression.

Effects of endogenous characteristics can be verified in several studies, for example, in De Grip, Sauermann (2012), which showed a 10% increase in the performance of workers in Call Center activity after participation in training courses when compared to the treatment and control groups.

Table 3. Comparing before and after only for who was trained

$$PEERS_{it} = + \alpha_i + \mu_t + Time_t + Controls_{it} + \varepsilon_{it}$$

Variable	Coefficient	Erro padrão	T	P > t
Time	2.039	1.036	1.97	0.049
Self-Evaluation	0.402	0.021	18.72	0.000
User Evaluation	0.025	0.014	1.73	0.084
Age	0.020	0.037	0.54	0.588
Length of service	-0.034	0.075	-0.46	0.649
Gender	2.566	0.567	4.53	0.000
Number of observations: 1134				

Source: elaborated by the authors

Notes: PEERS_{it} = result of the score attributed to the performance of individual *i* at the moment *t* by other servants from the same sector; Training = 1 for trained individuals, 0 otherwise; Self-evaluation = perception of the servant him/herself on his/her performance; User evaluation = median perception on performance by internal users of the service; Age = servant's age; Length of service = servant's length of service at the organization; Gender = 1 if Male and 0 if female.

Tests applied before and after training, only for individuals who participated in it, from the model presented below. This model was controlled by other characteristics that may have affected performance, such as: Self-evaluation; User evaluation; Servant's age; Length of service and Gender.

In other experiment conducted to estimate how much training contributed to individual productivity performance, comparing data from two Japanese automakers, Ariga et al. (2013) concluded that results on the effect of training on work varied due to dependent variable used, making it possible the interpretation that individual characteristics, work place and relationship between the peers and supervisors may alter results.

In addition to these studies, Magalhães et al. (2010), who had as objective to identify how the process of improvement of technical-administrative servants influences the activities performance at an Education Public Institution, verified that several elements interfere with the process dynamic, among them the lack of an explicit policy of qualification, which impacted negatively the results expected.

Then, endogenous characteristics may affect and contribute to the improvement of the group of analyzed servants, such as in Table 3. Thus, it was not possible to evaluate, through the mentioned regression, the direct training effect, once it was not controlled by the group of untrained groups. The following analyses take such groups into account.

4.3 Effects of training

Table 4 presents the results of estimation of model 1, considering the two specifications proposed. First, the performance of trained servants (Treatment group) was compared with the performance of untrained servants (Non-treatment group). Posteriorly, the same model was estimated, but considering as control group only the untrained servants that started working in the same period than the trained servants (servants that started working after 2008).

Results of Table 4 presented evidence that training has not had significative effect on servants' performance in both specifications, given the statistical significance of the coefficient on the interaction between the variables Training and Time. Table 4 presents the results of estimation of the following model, considering the two specifications proposed. First, the performance of trained servants (Treatment group) was compared with the performance of untrained servants (Non-treatment group). Posteriorly, the same model was estimated, but considering as control group only the untrained servants that started working in the same period than the trained servants (servants that started working after 2008). In this case, the results obtained support the hypothesis H1 that training not necessarily has positive effect on public servant's individual performance.

In particular, it is possible that the improvement of servants' performance in the analysis that did not take the control group into account may be associated with acquisition of experience over time and not to training (Aguinis & Kraiger, 2009; Ariga et al., 2013; Fonseca et al., 2013).

Such results reinforce one of the main issues of the Brazilian public service, whose labor legislation and organizations characteristics are obstacles for the variable remuneration, leaving the organizations under moral hazard influence, once the workers' performance is conditioned to personal motivations in detriment of organizations objectives (Klann et al., 2015).

Moreover, this result raises doubts about the quality or necessity of the offer of some training in public institutions, as is the case of familiarization training (Cavazotte, De Assis Moreno Jr, & Turano, 2015). Such training consumes a large amount of public resources and the results obtained do not show improvement in the servants' performance.

Another factor that corroborates the ineffectiveness of training in relation to performance was the creation of Familiarization as a compulsory training, which may decrease the motivation that leads the individual to participate in the training and provoke less favorable attitudes towards learning (Salas et al., 2012). In this case, allied to the problem of moral hazard caused by the absence of an incentive policy, it is possible that ineffectiveness of training may be associated with the quality of the organizational environment. In other words, even if there were incentive mechanisms to increase productivity, problems in the institution's environment or among servants in the same sector could decrease the perceived effectiveness of training.

In this context, literature points to the need to develop planning policies and management of the organizational environment for the effectiveness of training. This is because training success depends not only on incentive mechanisms, but also on the quality of its program and context variables. The correlation between quality variables that support learning and performance at work, as analyzed by Balarini, Zerbini and Martins (2014), corroborate the necessity of to reconciling motivation, quality of training and individual incentives for the training success.

Table 4. Effect of training on the perception of performance

$$PEERS_{it} = \alpha_i + \mu_t + Training_i + Training_i \cdot Time_t + Controls_{it} + \varepsilon_{it}$$

Variable	Treatment x Non-Treatment		Treatment x Control	
	Coefficient	P > t	Coefficient	P > t
Training	-0.952	0.510	2.675	0.189
Training.time	1.083	0.455	-2.846	0.145
Self-Evaluation	0.489	0.000	0.458	0.000
User Evaluation	0.054	0.000	0.100	0.000
Age	0.018	0.483	0.091	0.018
Length of service	-0.013	0.693	-0.108	0.014
Gender	1.971	0.000	1.346	0.011
Number of observations:	3830		1931	

Notes: PEERS_{it} = result of the score attributed to the performance of individual i at the moment t by other servants from the same sector; Training = 1 for trained individuals, 0 otherwise; Self-evaluation = perception of the servant him/herself on his/her performance; User evaluation = median perception on performance by internal users of the service; Age = servant's age; Length of service = servant's length of service at the organization; Gender = 1 if Male and 0 if female.

The results obtained are in line with the guidelines that mention training not as a single and isolated event, but as a systemic process that, if well designed, shall work as stimulus to the various metrics of corporate well-being (Salas et al., 2012). Then, formulation, implementation and evaluation of training should be conducted from decisions adopted aiming at efficacy and training, under the point of view both of incentive mechanisms and quality training and organizational environment.

Thus, it is reinforced the verification that the efficiency of individual's productive performance evaluation will be identified through a program of performance management, which includes all organizational practices and policies, besides clear objectives and metrics that do not present distorted results (Aguinis & Pierce, 2008; Grumeman & Saks, 2011; Speklé & Verbeeten, 2014).

5 FINAL CONSIDERATIONS

In general, the results obtained in this research suggest that the training analyzed had no impact on the trained servants' individual performance. Although they cannot be expanded to any type of training in public sector, such results reinforce one of the main issues of the Brazilian public service, whose labor legislation and organizations characteristics are obstacles for the variable remuneration, leaving the organizations under moral hazard influence, once workers' performance is conditioned to personal motivations in detriment of organizations objectives (Klann et al., 2015).

In this case, allied to the problem of moral hazard caused by the absence of an incentive policy, it is possible that ineffectiveness of training may be associated with the quality of the organizational environment. In other words, even if there were incentive mechanisms to increase productivity, problems in the institution's environment or among servants in the same sector could decrease the perceived effectiveness of training.

Thus, considering that the new public management is based on results, the results point to the need to evaluate the goals and results in the work agenda of Brazilian public institutions, besides implementing performance management programs based on clear goals and metrics that do not generate distorted results, which encompass the complexity of information related to individual and organizational characteristics (Matei & Antonie, 2014; Speklé & Verbeeten, 2014).

The results of this research do not allow specific statements about the quality of the training analyzed. However, the figures presented by the Public Servant Development Course show that the projects represented, throughout the researched period, 70% training offered by the institution, with approximately 2,430 hours of training. In this context, although it did not generate significant results, the familiarization training represented a significant percentage of the institution's servant training policy. Moreover, this result raises doubts about the quality or necessity of the offer of some training in public institutions, as it is the case of familiarization training (Cavazotte, De Assis Moreno Jr, & Turano, 2015). The results of the training investigated suggest that such training consumes a large amount of public resources and the results obtained do not show improvement in the servants' performance.

The results of this research can contribute to the IFES, collaborating with decisions on the implementation of personnel qualification policy, which is in elaboration stage, by a commission appointed by the Rector (IFES, 2016), as well as with a possible improvement of the performance evaluation program, which may evolve into the performance management program, valuing the skills accumulated by the servants and also those obtained in training.

In this context, it is also recommended that the Human Resources area, responsible for the processes of training and evaluation of personnel performance, plays a strategic role, since the success of an integrated human resources policy is fundamental to the success of implementation of training and performance management programs.

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