

# THE INFLUENCE OF TQM ON ORGANIZATIONAL COMMITMENT, ORGANIZATIONAL CITIZENSHIP BEHAVIOURS, AND INDIVIDUAL PERFORMANCE\*

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## Abstract

The main aim of this research is to analyze if the adoption of Total Quality Management (TQM) principles is really associated with more favorable attitudes from collaborators in organizations, specifically in Higher Education. Empirical data were collected through a questionnaire applied to 82 faculty members at higher education institutions (HEIs). Although the relationship of dependence between TQM and individual performance was not confirmed, the results obtained do corroborate the idea, according to which the adoption of TQM principles is associated with more favorable attitudes regarding organizational commitment and organizational citizenship behaviors. Materializing specific work-related attitudes cannot be directly imposed or prescribed. The findings highlight the importance of enhancing its antecedents, and suggest TQM as a potential significant opportunity to leverage such behaviors most beneficially. This is one of the few studies that focus on the influence of TQM concerns in work-related attitudes and behaviors in the specific context of HEIs.

**Keywords:** TQM, higher education, individual performance, organizational commitment, organizational citizenship behavior.

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## 1. Introduction

A number of papers suggest clearly that the adoption of Total Quality Management (TQM) may be associated with more favorable work-related attitudes (e.g. Karia and Asaari, 2006; Sommer and Merrit, 1994). Based on such a perspective, the main purpose of this paper is to evaluate the existing relationships between concerns with TQM principles and some work attitudes in Higher Education, and to answer to the following question: *Do organizations' concerns with TQM principles have positive effects on workers' attitudes and behaviors?*

It seems appropriate to analyze such relationships within the framework of higher education, since these institutions are characterized as autonomous (self-sufficient) establishments that provide services to the community (e.g. economic transfer of scientific and technological knowledge), and should comply with the codes of good management practices. Considering that collaborators' positive attitudes are generally associated, directly or indirectly, with a raise in productivity (Kinicki and Kreitner, 2006), the confirmation of the positive impact of TQM on collaborators' attitudes seems essential to higher education institutions (HEIs – universities, academies, or colleges). This study may allow HEIs to begin a greater effort towards the adoption of TQM principles, which seems particularly important due to the changes that occurred with the introduction of the Bologna Process in the educational system, as well as for the general uncertainty that is being felt worldwide, nowadays.

Moreover, the lack of research focusing on the analysis of the influence of TQM on individual performance, and in work-related attitudes and behaviors, specifically in the framework of higher education, represents a significant gap in the literature. As a result, this paper may contribute to stressing the importance of such relationships in the organizational context, particularly in what HEIs are concerned.

In the next section, the major theoretical assumptions underlying TQM and work-related attitudes and behaviors are described; based on 9 hypotheses, a research model is proposed to guide the further empirical research.

## 2. Theoretical framework

### 2.1. Total Quality Management

More and more governments are concerned about quality and accountability of HEIs (heavily funded). As a result, such organizations are compelled to achieve high quality to be competitive in attracting students, and to be accountable for their performance (Kanji and Tambi, 1999). TQM was applied successfully in manufacturing companies in the early 1980s, and the success of several significant companies in applying TQM principles as a way out of the crisis, stimulated HEIs to follow similar management strategies.

The initial efforts to implement TQM-based continuous improvement programs in higher education started in USA in the mid-80s. Since then, the number of US HEIs applying TQM principles rose significantly, and a number of European HEIs have also began to recognize the benefits of quality culture and quality continuous im-

provement for educational systems, and to turn to TQM, adopting quality excellence assessment approaches (e.g. EFQM excellence model) and/or standardized quality models (ISO 9001). Comparing newer versions of ISO 9001 requirements with EFQM excellence model principles, several common key elements may be pointed out, such as continuous improvement, customer focus, and leadership.

Characterized as a continuously evolving management system, TQM is defined as 'everyone's mutual cooperation in an organization, and the associated business processes to produce valuable products and services that will match and, preferably, exceed the consumers' needs' (Dale, Van Der Wiele and Van Iwaarden, 2007, p. 4). Considering the large number of successes and failures in the application of TQM principles a lot of studies have focused on identifying those managerial issues that must be given close and continuous attention to ensure the success of the strategy, including: (i) top management commitment (e.g. Chowdhury, Paul and Das, 2007), (ii) leadership skills (e.g. Beer, 2003), (iii) customer focus (e.g. Boaden, 1996), (iv) open culture (e.g. Silaf and Ebrahimpour, 2003), (v) education and training (e.g. Prajogo and Cooper, 2010), (vi) employees' commitment and involvement (e.g. Bou and Beltrán, 2005), (vii) team working (e.g. Prajogo and Cooper, 2010), (viii) benchmarking (e.g. Ruggieri and Merli, 1998), and (ix) employees' empowerment (e.g. Powell, 1995).

## **2.2. Organizational commitment (OC)**

OC has received a special attention in the last decades, and several studies have been devoted to defining and operationalizing the concept, as well as to studying its antecedents and outcomes. Concerns regarding commitment in the workplace are still one of the main issues in such fields as human resource management, especially because of the numerous studies that found significant evidences of relationships between OC and attitudes in the workplace (e.g. Porter *et al.*, 1974).

Over the years, commitment has been defined and measured in many different ways. As a result, the lack of consensus in the definition of commitment contributed greatly to its treatment as a multidimensional construct (Meyer and Allen, 1991). The most extensively researched multidimensional model of OC is for sure the three-component model of organizational commitment proposed by Meyer and Allen (1991), based on the idea that the construct is composed of three different dimensions:

(1) Affective commitment – reflects collaborators' affective attachment to the organization. Affective commitment 'refers to the employee's emotional attachment to, identification with, and involvement in the organization. Employees with a strong affective commitment continue employment with the organization because they want to do so' (Meyer and Allen, 1991, p. 67).

(2) Continuance commitment – exchange based view of commitment denoting the perceived costs that collaborators link to leaving their job. Continuance commitment 'refers to an awareness of the costs associated with leaving the organization. Employees whose primary link to the organization is based on continuance commitment remain because they need to do so' (Meyer and Allen, 1991, p. 67).

(3) Normative commitment – refers to a perceived obligation to remain in the organization. Normative commitment ‘reflects a feeling of obligation to continue employment. Employees with a high level of normative commitment feel that they ought to remain with the organization’ (Meyer and Allen, 1991, p. 67).

The perspective adopted in this research is the one proposed by Cook and Wall (1980), who stress that OC refers to collaborators’ affective reactions to the characteristics of the organization they work in. According to the approach, OC is related to collaborators’ feelings of connection with the organization’s goals and values, to the role that they play in relation to these, and to the connection with the organization, with the aim of benefitting it, and not just for its instrumental value.

### 2.3. *Organizational Citizenship Behavior (OCB)*

From its inception until now, OCB has been approached by hundreds of research papers (e.g. Rego, Ribeiro and Cunha, 2010), and different terminologies have been used in literature to describe OCB (e.g. ‘contextual performance’, ‘extra role behavior’, ‘prosocial organizational behavior’, or ‘organizational spontaneity’). OCBs are generally described in literature as discretionary and spontaneous behaviors that go beyond formal job requirements, and are difficult to impose or even promote.

OCB has its roots in (i) Barnard’s proposal (1938), according to which, collaborators’ will to cooperate is indispensable for the organization, (ii) Katz and Khan’s (1966) three types of behavior required for organizations’ effective functioning, and (iii) Organ’s (1977) essay, according to which people can adopt cooperative behaviors in order to respond reciprocally to work experiences that provide satisfaction, as opposed to behaviors inherent to roles, that depend on certain restrictions.

Different taxonomies have been proposed; however, although most researchers agree on the multidimensionality of the construct, there is a lack of consensus about its dimensionality, and most of these taxonomies overlap with each other. One of the most important conceptualizations for theory development was the five-dimension taxonomy proposed by Organ (1988), identifying five different discretionary extra-role organizational behaviors:

**Altruism** – behavior that concerns with the helping approach of organizations’ collaborators who are motivated to help others in work-related problems, covering behaviors like helping voluntarily overloaded co-workers or new colleagues on their job assignments.

**Civic virtue** – behavior that refers to concerns about the participation in the life of the organization (e.g. promoting organization’s image). Podsakoff *et al.* (2000) explain that civic virtue represents ‘a macro-level interest in, or commitment to, the organization as a whole’, like ‘willingness to participate actively in its governance [...] to monitor its environment for threats and opportunities [...] and to look out for its best interests [...], even at great personal cost’.

**Sportsmanship** – collaborators’ behavior that concerns with maintaining a positive general stance in relation to their organization, mainly when requiring selfless-

ness or postponement of own interests in the benefit of organization's ones. Sportsmanship involves an 'inclination to absorb minor inconveniences and impositions accruing from the job without complaints or excessive demands for relief and redress' (Konovsky and Organ, 1996, p. 255).

**Conscientiousness** – spontaneous behavior that goes beyond formal requests, related to accepting and following rules, regulations, procedures and standards, and generally involving characteristics like trustworthiness, organization, hardworking, and punctuality. Such attitude is generally recognized as highly beneficial, helping collaborators to improve performance, since they are more aware of procedures and could then make effective and prompt decisions.

**Courtesy** – discretionary behavior that focus on avoiding and preventing work-related problems with others, and taking the appropriate measures in order to relieve its effects in the future. Collaborators who exhibit courtesy behaviors may reduce inter-group conflicts, thereby diminishing the time spent on conflict management activities (Podsakoff *et al.*, 2000).

#### **2.4. Individual Performance (IP)**

Individual performance (also referred to as 'employee performance' or 'job performance', among others) may be regarded as one of the most widely studied issues in fields like human resource management, or organizational behavior, and has been shown to play a significant role in organizations' overall performance.

Although researchers turn frequently to customized IP measures, making it difficult to allow comparisons between jobs, organizations or empirical researches, as observed throughout literature, IP at the workplace is often operationalized as a multi-dimensional construct (e.g. Lee, Tan and Javalgi, 2010): (i) in-role performance, and (ii) extra-role performance.

**In-role performance** (also referred to as 'task performance') – actions to meet formal requirements of assigned job, including goals like production volumes or quality standards conformance. This dimension involves performing tasks, generally defined in job descriptions, which contribute to the technical core of the organization (Borman and Motowidlo, 1993).

**Extra-role performance** (also referred to as 'non-task performance' or 'contextual performance') – actions that are not explicitly considered in job descriptions, as involvement in quality improvement programs on own initiative. Extra-role performance involves employees' initiatives that lie outside the frontiers of formal job descriptions and are carried out by employees at their own discretion (Williams and Anderson, 1991).

### **3. Research model: TQM, work attitudes, and individual performance**

Several studies provide findings suggesting that the introduction of TQM programs in organizations positively influences the employees' commitment (e.g. Allen and Brady, 1997). For example, Guimaraes (1996) found that TQM significantly increases the level of job satisfaction, job involvement, OC and intention to stay with

the organization among employees. Karia and Asaari (2006) observed that TQM practices were positively correlated with employees' work-related attitudes, such as job involvement, job satisfaction, career satisfaction, and OC. More specifically, the authors concluded that training and education, empowerment, teamwork, prevention of problems and continuous improvement have a significant positive effect on OC. Findings of the study conducted by Boon, Safa and Arumugam (2006) reveal that teamwork, organizational communication, organizational trust and teamwork are positively associated with affective commitment. The study also shows that the organizational communication is perceived as a dominant TQM practice and is strongly associated with affective commitment.

Moreover, several theoretical and empirical researches show that specific TQM factors may lead to increased levels of OC. Daily and Bishop's (2003) model indicates that OC has a significant relationship with employee involvement success both directly and indirectly through empowerment. A positive relationship between teamwork and the level of OC was also found by a number of researches (e.g. Becker, 1992). In accordance, the level of OC is expected to be higher in organizations that exhibit a higher focus on team work. Regarding training, findings are somehow mixed. While some researchers found that training plays a clear role in enhancing the level of OC (e.g. Lambooi *et al.*, 2007), suggesting that employees, who felt they have been provided adequate training, exhibited higher levels of OC, other studies found little evidence to support such relationship (e.g. Davies, Taylor and Savery, 2001). Accordingly, the following hypothesis is proposed:

*H1: TQM is significantly related to OC.*

According to Sommer and Merrit (1994), the introduction of TQM in organizations has a positive impact on OCB. In fact, some theoretical and empirical studies provide arguments and findings to support such an idea. For example, Hoffi-Hofstetter and Mannheim (1999) found a significant relationship between employee involvement (a key issue in the TQM philosophy) and OCBs. As stressed by Lambert (2000), providing the opportunity to submit suggestions and to attend meetings on quality improvement could signal to employees that the organization cares about them. Based on the reviewed literature, the following hypothesis is suggested:

*H2: TQM is significantly related to OCB.*

Throughout literature, many studies provide significant evidences suggesting that several of the TQM elements are positively associated with improvements in organizations' performance: greater profitability, market share, customer satisfaction, and other operational improvements like consistency of efforts, stability of processes, allowing higher quality and productivity, as well as reductions in scrap and rework costs, and non-value added activities, among other benefits. The study of Rahman and Bullock (2005) show that soft TQM elements (workforce commitment, shared vision, customer focus use of teams, and cooperative supplier relations) are significantly related to performance, corroborating the conclusions of Jung and Hong (2008) accord-

ing to which soft TQM elements (employee empowerment, training, and team spirit) play a significant role on organizational performance.

Although TQM's influences in organizational performance have been widely investigated, there are no extensive and significant empirical evidences about the different effects of TQM on IP. Results of the study conducted by Sadikoglu and Zehir (2010) reveal that TQM practices are significantly and positively correlated with IP. As stressed by Karia and Asaari (2006), the successful implementation of TQM increases the likelihood that employees will be motivated to perform well and contribute more effectively to company growth and success. In a total quality environment, continuous training and development initiatives improve employees' knowledge and skills, helping these to fulfil better their tasks (Goetsch and Davis, 2006). Based on these considerations, the third research hypothesis is formulated:

*H3: TQM is significantly related to IP.*

Extensive research in organizational behavior has focused on analyzing relations between OC and citizenship behaviors. Although some researchers found no significant support for a positive relationship between OC and OCB (e.g. Tansky, 1993), a number of studies do provide strong theoretical support and/or strong empirical evidence for a commitment-OCB relationship. The conceptualization of commitment in Weiner's (1982, p. 426) paper is founded on a broad approach, including not only identification, but also a second immediate determinant-possession of generalized values of loyalty and duty, and on the premise that 'work behavior may be determined not only by calculative-instrumental processes, but also by normative pressures such as personal moral standards'. The author stresses that, 'such internalized pressures, once established, exert stable, long term influences on behavior that are independent of situational circumstances, and linkages to rewards or punishments', suggesting that employees' personal involvement and self-sacrifice on behalf of organizations' own benefits may be influenced by commitment. Moreover, the multidimensional model of OC proposed by Meyer and Allen (1997) approaches OCB as an outcome of organizational commitment, showing that employees with strong affective commitment are really motivated to engage in extra-role behaviors. The meta-analysis performed by Podsakoff, MacKenzie and Bommer (1996) also argues for a significant positive relation between OC and several dimensions of OCB.

In fact, OC has long been considered as antecedent of OCB, and several empirical studies have supported this idea that there is a significant relationship between both variables (e.g. Kim, 2006), especially between affective commitment and OCB's dimensions (e.g. Lavelle *et al.*, 2009). Hence, it is hypothesized that:

*H4: OC is significantly related to OCB.*

Since the main goal of this study is to investigate the direct and indirect effects that TQM may have on OC, and on OCB, and considering the numerous theoretical and empirical evidences that suggest a direct relationship between TQM's dimensions and work-related attitudes, it seems highly pertinent to reflect on whether or not TQM

may help to better explain the relationship between OC and OCB. As a result, the following hypothesis is also proposed:

*H4a: TQM mediates the relationship between OC and OCB.*

The results of the study carried out by Yiing and Ahmad (2009) show that OC seems significantly related to job satisfaction, but not to IP. Actually, although some researches did not find significant support for a positive relationship between OC and IP, several others do provide strong evidences for such a relationship. The importance of enhancing OC is highlighted by the extensive literature revealing its positive impact on employees' job performance, reducing absenteeism and turnover rates, and improving employees' adaptability to organizational change (Su, Baird and Blair, 2009). This positive relationship between OC and IP has been supported by several prior studies (e.g. Jaramillo, Mulki and Marshall, 2005; Meyer, Allen and Smith, 1993). Locke, Latham and Erez (1988) argue that the strength of this relationship will depend on the amount of variance in commitment. According to Meyer *et al.* (2002) commitment has an impact on performance, being this impact positive for the affective and normative commitment, and negative for the continuance commitment. In an attempt to assert these different propositions and findings we propose the following hypothesis:

*H5: OC is significantly related to IP.*

Considering the significant empirical evidences regarding the potential effects of TQM on IP, and the hypothetical relationship between TQM's dimensions and OC, it seems also pertinent to question if whether or not TQM may influence the relationship between OC and IP. Thus, the following hypothesis is also formulated:

*H5a: TQM mediates the relationship between OC and IP.*

Many researchers provide strong evidences for the influence of OCB on IP in several sectors (e.g. Ozer, 2011). For example, the results of the research performed by Kernodle (2007) enhance a strong positive relationship between OCB and employee performance, highlighting that each OCB dimension appears positively and strongly correlated to employee performance, both at the individual and group level, supporting the idea that employees that exhibit higher levels of OCB may have a better job performance. Findings reached by Bommer, Dierdorff and Rubin (2007) also suggest that group-level OCB significantly moderated the relationship between individual-level OCB and job performance, that high individual-level OCB yielded greater significant increases in job performance ratings when group-level OCB was rare. As a matter of fact, co-worker relations seem to mediate the relationship between OCB and job performance (see Ozer, 2011). Indeed, when IP is considered in a broad approach, OCB is often considered as one of its components, considering the high correlation between both dimensions found in a number of studies (e.g. Smith, Organ and Near, 1983). Based on these assertions, the following hypothesis is suggested:

*H6: OCB is significantly related to IP.*

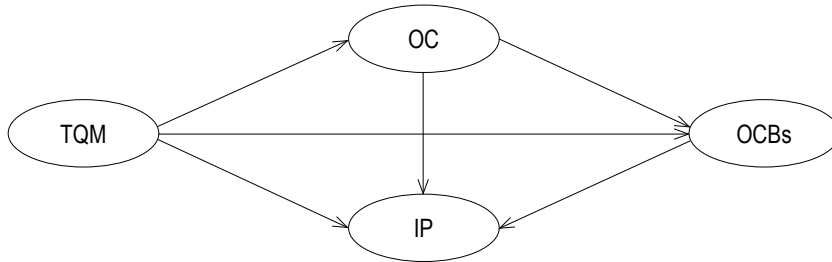
Since TQM dimensions (or at least some of these) appear to influence somehow OCB, and based on the evidences found in literature regarding the potential effects of



TQM on IP, it seems still pertinent to question if whether or not TQM may influence the relationship between OCB and IP. In accordance, the following hypothesis is also proposed:

*H6a: TQM mediates the relationship between OCB and IP.*

Based on the aforementioned arguments, Figure 1 summarizes our hypothesized research model.



**Figure 1: Research Model**

#### **4. Research methodology**

##### *Data collection and Analysis*

Data was gathered through a questionnaire applied both in the public and private sector. This questionnaire was mostly based on three seven points-Likert type scales (from 1 meaning ‘completely disagree’ to 2 meaning ‘completely agree’). These scales were developed by several researchers and previously applied in different contexts and different countries.

Accordingly, we validated the questionnaire for the Portuguese population, translating it into Portuguese and converting it back into English; some mistakes were corrected. Moreover, a pre-test was performed, and the questionnaire was reviewed by a panel of six professors, and additional changes were applied. The final questionnaire was then published online for all the Portuguese public and private HEIs. Professors were invited by e-mail to participate in the research. A total of 82 questionnaires were completed and returned from 19 HEIs.

Statistical analysis was conducted through the Statistical Package for Social Sciences program for Windows (v. 18.0). Cronbach’s alpha was used to analyze the internal consistency of measures. In addition, several bivariate analyses were performed using student t-test analyses, linear regression analysis, and correlation-based analyses.

##### *Development on measures and scales*

**TQM** – While previous versions of ISO 9000 were essentially connected with quality assurance system, at best, the revision performed in year 2000 approached new elements based on the TQM, like ‘customer focus’ and ‘continuous improvement’, approximating ISO 9000 cornerstones with TQM principles. Last editions of the ISO 9001 standards (2000 and 2008 versions) increase the match between quality management systems requirements and TQM frameworks, bringing a stronger emphasis on cus-

tomer satisfaction, and continuous performance improvement, as well as on employees' focus toward meeting customer requirements. In accordance, in this research, TQM was assessed through a binary variable, considering 'zero' for non-certified institutions and 'one' for certified institutions. HEIs with more than three certified services and/or schools (e.g. academic management system, information and documentation management system, projects and research support system) were considered certified institutions. An Internet research was carried out to assess the (in)existence of certified services in HEIs that participated in the study; seven out of the nineteen participating institutions had, at least, three certified services.

*Organizational Commitment* – OC was operationalized through a nine-item measure scale developed by Cook and Wall (1980) that describes collaborators' commitment: identification with the organization (three items), involvement with the organization (three items) and, loyalty to the organization (three items).

*Organizational Citizenship Behavior* – OCB was assessed through a 20-items measure scale used by Lo and Ramayah (2009) that describes Organ's (1988) five-dimension taxonomy of OCB: (i) civic virtue, (ii) conscientiousness, (iii) altruism, (iv) courtesy, and (v) sportsmanship. Four of the items were withdrawn from the scale by the authors, since they did not apply to the cultural context in which they used the instrument. However, we kept these items in our study.

*Individual Performance* – the concept of 'individual performance' was measured using the performance traits that characterize collaborators, through a self-assessment 18-items measure scale of the performance traits developed by Xiaowei (2006), based on an extensive literature review. Seven dimensions were considered: the relationship among organizational networks (3 items), the transmission of employee's knowledge to colleagues (2 items), trust (4 items), group synergy (2 items), performance chain influence, meaning the extent to which others contribute to employee's own achievements (2 items), uneasily substitutable, meaning the extent to which co-workers can perform employee's tasks (2 items) and innovation traits, meaning the extent to which the employee is innovation-driven (3 items).

Cronbach's alpha was used to estimate multiple-item scales' internal consistency. As observed in Table 1, Cronbach's alpha values range from 0.584 to 0.878. Results indicate that, although the value for the scale of IP is somewhat low, slightly under the typical 0.70 cut-off value, the multi-item measure scales used to assess both OC and OCB appear to provide a good level of internal consistency, suggesting that these theoretical constructs exhibit appropriate psychometric properties.

**Table 1:** Cronbach's alpha values

| MULTI-ITEM MEASURE SCALES                 | Number of items | Cronbach's alpha |
|-------------------------------------------|-----------------|------------------|
| Organizational Commitment (OC)            | 9               | ,878             |
| Organizational Citizenship Behavior (OCB) | 20              | ,826             |
| Individual Performance (IP)               | 18              | ,584             |

## 5. Findings and discussions

### *TQM and Employees' work related attitudes and behavior*

According to the results summarized in Table 2, the mean of OC is clearly higher for certified institutions, while the difference in relation to the OCB is slightly lower. Regarding IP, the difference between means is not meaningful at all, suggesting that collaborators' IP is not significantly different between certified and non-certified institutions.

**Table 2:** Mean Values

| MULTI-ITEM MEASURE SCALES                 | TQM | Observations | Mean   |
|-------------------------------------------|-----|--------------|--------|
| Organizational Commitment (OC)            | No  | 52           | 4,7764 |
|                                           | Yes | 32           | 5,3043 |
| Organizational Citizenship Behavior (OCB) | No  | 52           | 5,6991 |
|                                           | Yes | 32           | 5,9706 |
| Individual Performance (IP)               | No  | 52           | 4,6584 |
|                                           | Yes | 32           | 4,7887 |

The Levene's test was applied to check for homocedasticity. As shown in Table 3, the result of the Statistics ( $p = 0.379; 0,170; 0,243$ ) demonstrated that there is homogeneity of variance between groups (for the three variables), since the  $p$  values are greater than 0.05. Thus, the statistical test to be used is the one that assumes equal variances. Still in Table 3, in what OC concerns, results of the  $t$ -test for equality of means show that  $p\text{-value} = 0.048 < 0.05$ , suggesting that there are significant statistical differences between means for institutions that exhibit concerns with TQM principles and the ones that do not. Regarding the OCB construct,  $p\text{-value} = 0.017 < 0.05$ , which means that the difference between institutions seems also statistically highly significant. Unlike these two constructs, in what IP concerns,  $p\text{-value} = 0.224 > 0.05$ , which means that differences between both types of institutions are not statistically significant. In short, results analyzed above allow the corroboration of hypotheses 1 and 2 and the rejection of the third hypothesis, suggesting that engagement with TQM principles influences both OC, and OCB, but not IP.

**Table 3:** Student T-test results

|     |                             | Levene's test<br>for equality<br>of variances |      | t test for equality of means |        |                    |                    |                          |
|-----|-----------------------------|-----------------------------------------------|------|------------------------------|--------|--------------------|--------------------|--------------------------|
|     |                             | F                                             | Sig. | t                            | df     | Sig.<br>(2-tailed) | Mean<br>difference | Std. Error<br>difference |
| OC  | Equal variances assumed     | ,783                                          | ,379 | -2,005                       | 82     | ,048               | -,52781            | ,26330                   |
|     | Equal variances not assumed |                                               |      | -2,054                       | 70,865 | ,044               | -,52781            | ,25697                   |
| OCB | Equal variances assumed     | 1,915                                         | ,170 | -2,444                       | 82     | ,017               | -,27141            | ,11103                   |
|     | Equal variances not assumed |                                               |      | -2,622                       | 79,066 | ,010               | -,27141            | ,10350                   |
| IP  | Equal variances assumed     | 1,385                                         | ,243 | -1,174                       | 82     | ,244               | -,13027            | ,11092                   |
|     | Equal variances not assumed |                                               |      | -1,235                       | 75,920 | ,221               | -,13027            | ,10547                   |

As to what H1 (TQM is significantly related to OC) is concerned, the results corroborate the findings of Sommer and Merritt (1994) and Guimaraes (1996), according

to which TQM programs in organizations influence positively workers' commitment. Karia and Asaari (2006) argue that TQM practices, specifically training, education, empowerment, team work, prevention of problems and continuing improvement, influence positively the workers' commitment. The second hypothesis (TQM is significantly related to OCB) was supported, corroborating the results obtained by Sommer and Merritt (1994), which enhance that the introduction of TQM programs in the organizations leads to an increase in workers' OCBs. Finally, the third hypothesis (TQM is significantly related to IP) was rejected, which means that concerns with TQM do not have significant influence on IP.

### Linear regression

Next, we will analyze the influence of OC in Professors' OCB and the influence that TQM has in this relationship. For this purpose, the variables OC and OCB, measured through Likert scales with multiple items, were aggregated. Thus, the different results were obtained though the mean of the different scores.

**Table 4:** ANOVA results for regression model 1

| MODEL |            | SUM OF SQUARES | DF | MEAN SQUARE | F     | Sig.              |
|-------|------------|----------------|----|-------------|-------|-------------------|
| 1     | Regression | 4,225          | 3  | 1,408       | 6,528 | ,001 <sup>a</sup> |
|       | Residual   | 17,260         | 80 | ,216        |       |                   |
|       | Total      | 21,486         | 83 |             |       |                   |

a. Independent variable: (Constant), TQM x OC, OC, TQM

b. Dependent variable: OCB

As summarized in Table 4, we can see that the *p-value* is equal to 0.001. Considering a 5% significance level, it is possible to assume that the model is significant. This means that there is a significant relationship between OCB and, at least, one of the independent variables.

Through the analysis of the standardized coefficients (see Table 5), we may see that OC seems to have a greater relative contribution to explain the behavior of OCB. Moreover, results (*p-value* = 0,009) suggest clearly that there is a significant relationship between OC and OCB, at a 5% significance level. These results seem to validate the fourth hypothesis, and to corroborate results of other previous researches, like those obtained by Lavelle *et al.* (2009), suggesting that collaborators highly committed to the organization show higher OCBs.

**Table 5:** Coefficients for model 1

| MODEL |            | UNSTANDARDIZED COEFFICIENTS |            | STANDARDIZED COEFFICIENTS | t      | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|
|       |            | B                           | Std. Error | Beta                      |        |      |
| 1     | (Constant) | 5,014                       | ,264       |                           | 19,012 | ,000 |
|       | OC         | ,143                        | ,054       | ,336                      | 2,678  | ,009 |
|       | TQM        | -,002                       | ,489       | -,002                     | -,003  | ,997 |
|       | TQM x OC   | ,037                        | ,093       | ,196                      | ,400   | ,690 |

a. Dependent variable: OCB

Moreover, results in Table 5 also show that TQM, as well as the interaction between OC and TQM, are not significant. So, it seems safe to conclude that the relationship between OC and OCB is not affected by TQM, which suggests the rejection of the initial hypothesis that TQM would mediate the relationship between OC and OCB (H4a).

Regarding the influence of OC and OCB on Professors' IP, as well as the influence of TQM on these relationships, the ANOVA results for the regression are shown in Table 6. Since the *p-value* is equal to 0.000, considering a 5% significance level, it is possible to assume that the model is significant. This means that there is a significant relationship between IP and, at least, one of the independent variables.

**Table 6:** ANOVA results for regression model 2

| MODEL |            | SUM OF SQUARES | DF | MEAN SQUARE | F     | Sig.              |
|-------|------------|----------------|----|-------------|-------|-------------------|
| 2     | Regression | 7,125          | 5  | 1,425       | 8,422 | ,000 <sup>a</sup> |
|       | Residual   | 13,197         | 78 | ,169        |       |                   |
|       | Total      | 20,321         | 83 |             |       |                   |

a. Independent variable: (Constant), TQM x OCB, OC, OCB, TQM x OC TQM

b. Dependent variable: Individual performance (IP)

Based on the results shown in Table 7, we can see that there is no significant relationship between OC and IP (*p-value* = 0.12), which goes against the results of previous researches (e.g. Locke, Latham and Erez, 1988). Such observation may be due to the fact that the OC perspectives used by the authors of the studies previously referred are different from the OC approach used in this study. On the contrary, OCB seems to influence significantly IP (*p-value* = 0.000). These results support the initial hypothesis that OCB would be significantly related to IP (H6), but do not corroborate the idea that OC would be significantly related to IP (H5).

**Table 7:** Coefficients for model 2

| MODEL |            | UNSTANDARDIZED COEFFICIENTS |            | STANDARDIZED COEFFICIENTS | t      | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|
|       |            | B                           | Std. Error | Beta                      |        |      |
| 2     | (Constant) | 1,411                       | ,609       |                           | 2,318  | ,023 |
|       | OC         | -,079                       | ,050       | -,190                     | -1,571 | ,120 |
|       | OCB        | ,636                        | ,112       | ,654                      | 5,672  | ,000 |
|       | TQM        | 1,338                       | 1,274      | 1,322                     | 1,050  | ,297 |
|       | TQM X OC   | ,214                        | ,092       | 1,157                     | 2,321  | ,023 |
|       | TQM X OCB  | -,414                       | ,239       | -2,451                    | -1,733 | ,087 |

a. Dependent variable: Individual performance (IP)

Regarding the effect of TQM on IP, based on Table 7, results suggest that TQM is not significant. The interaction between OC and TQM is significant at 5% level (*p-value* = 0.023), while the interaction between OCB and TQM is significant at 10% level (*p-value* = 0.087). In practical terms, this means that the IP is not directly affected by TQM, although TQM seems to affect moderately the relationship between OCB and IP. Naturally, since we concluded that there is no relationship between OC and IP, the significance of the interaction has no meaning here. As a result, these observations

seem to corroborate the initial hypothesis that TQM would mediate the relationship between OCB and IP (H6a), but do not support the idea that TQM could mediate the relationship between OC and IP (H5a).

### Correlation-based Analysis

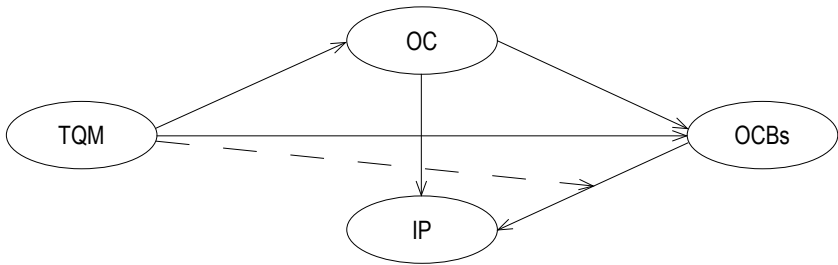
Pearson correlations between the different variables are reported in Table 8. It is possible to verify that there are positive significant correlations between TQM and both commitment (0.254), and OCB (0.261). Moreover, commitment appears to be significantly related to OCB (0.404), which in turn is correlated to performance (0.421).

**Table 8:** Correlations between variables

|            |                     | OC     | OCB    | IP   | TQM |
|------------|---------------------|--------|--------|------|-----|
| <b>OC</b>  | Pearson correlation | 1      |        |      |     |
| <b>OCB</b> | Pearson correlation | ,404** | 1      |      |     |
| <b>IP</b>  | Pearson correlation | -,049  | ,421** | 1    |     |
| <b>TQM</b> | Pearson correlation | ,254*  | ,261*  | ,060 | 1   |

\* p < 0.05    \*\* p < 0.01    (2-tailed).

Based on the different findings, a revised model is summarized in Figure 2.



**Figure 2:** Final model

## 6. Discussion and implications

The main purpose of this paper was to evaluate the existing relationships between concerns with TQM principles and some work attitudes in Higher Education.

Although TQM dimensions, and especially the so-called soft elements, are generally related to significant improvements in organizational performance, literature lacks significant empirical evidences concerning the different effects of TQM on work-related attitudes and on IP. While some researches seem to indicate that TQM practices may be positively correlated with IP (Karia and Asaari, 2006; Sadikoglu and Zehir, 2010), our results do not corroborate such assumption, since findings indicate that TQM does not have a direct influence on employees’ performance. However, results do suggest that TQM has an indirect role, acting as moderator on the relationship between OCBs and IP.

Indeed, our findings suggest that OCBs do have a positive significant influence on IP, supporting the idea that employees who exhibit higher levels of OCBs may have a better job performance. These results are consistent with previous studies (e.g. Kernoodle, 2007; Ozer, 2011), and are supported by the social exchange theory, often consid-

ered in researches focused on the phenomenon of employee reciprocity including OC and OCB, and according to which employees satisfied with how their organization care about their personal training & development, and career advancement, among other factors, feel morally obligated to reciprocate through positive attitudes and behaviors that may provide numerous benefits.

Furthermore, materializing specific work-related attitudes like OC or OCB cannot be directly imposed or prescribed. As a result, it is extremely important to enhance its antecedents, and TQM, as suggested by our findings, may well be a significant opportunity to leverage such behaviors most beneficially, since results lend further support to a number of theoretical and empirical studies that provide arguments and findings to support the idea that the introduction of TQM programs may have a positive significant effect in employees' OC (e.g. Guimaraes, 1996; Karia and Asaari, 2006), and in OCBs (Lambert, 2000; Sommer and Merrit, 1994), especially regarding such dimensions as leadership commitment, training and education, empowerment, teamwork, or continuous improvement that may contribute to signal to employees that the organization cares about them.

What can HEIs learn from this study? Our findings cannot be underestimated, and management boards need to be aware of such evidences, especially taking into consideration the significant changes that occurred with the introduction of the Bologna Process in the educational system, as well as the general uncertainty that is being felt worldwide, nowadays.

By addressing the influence of TQM concerns in IP, and in work-related attitudes in the context of higher education, the outcomes of our research positively contribute with fruitful insights valuable for HEIs' management, especially given the lack of research oriented to these organizations, regarding such issues.

First of all, it is worth pointing out again that findings support clearly the idea that OC is an antecedent of OCBs which, in turn, influence significantly IP. Thus, HEIs should focus on, and support an environment that may enhance both intrinsic and extrinsic factors that may stimulate employees' spontaneity, commitment and willing to support the pursuit of organizational goals, even if they have to exceed formal responsibilities and duties.

Moreover, it seems that, in HEIs exhibiting clear concerns with developing TQM-based initiatives, employees are more committed, and have more OCBs, compared to employees from institutions that do not show manifest concerns with TQM principles. As a result, it is specifically important that managers understand that the quest for quality efforts through strategies focused on principles like quality continuous improvement awareness, teamwork, and continuous learning orientation, do result in higher levels of OC and citizenship behaviors, which in turn allow consolidating organizations' competitive advantages.

Concluding, our findings suggest that governments, higher education boards, and HEIs' administrators should consider shifts toward changes that may allow faculties to focus more clearly on measures oriented to TQM principles. In last years, there

seems to have been an increase in emphasis on certification concerns in HEIs, which may be due to calls from state governments and accrediting bodies. Such calls have to be reinforced in order to foster such tendency, but keeping in mind that, although the revision performed in year 2000 approximated ISO 9000 cornerstones with TQM principles, ISO 9000 standards should be understood as a first step in the quest for quality continuous improvement, and not as an end in itself. Getting funding for TQM-based quality improvement programs is generally difficult, especially for public organizations. Our research findings could assist greatly, providing insightful positive arguments to support financially such investments.

## **7. Limitations and directions for future research**

First of all, a special attention must be paid to the small sample size, compared to the overall universe of professors in Portuguese HEIs. As a result, findings have to be interpreted with caution, especially regarding hypotheses not confirmed.

It is also worth pointing out that TQM was assessed through a binary variable, differentiating certified from non-certified institutions. It is true that newer versions of ISO 9001 requirements and TQM principles have several common key elements such as continuous improvement, or customer focus, enhancing ISO 9001 as a useful and suitable framework to foster TQM thinking throughout organizations. However, we cannot forget that ISO-based certification should be considered as the beginning of a quality continuous improvement process, rather than a goal itself. As a result, further researches might be performed, operationalizing TQM as a multidimensional construct. Such orientation may provide new and valuable insights into the influence of TQM on employees' work-related attitudes, and especially in IP, separating and assessing the influence of each dimension of TQM.

Moreover, our study focused exclusively on professors' attitudes and behavior. Further researches may expand this topic, considering other units of analysis inside HEIs, like administrative personnel, or faculties' managers, providing a whole picture of the effects of TQM in work-related attitudes, and IP in the context of HEIs.

Additionally, our data collection was performed totally anonymously. As a result, we could not perform an analysis about whether behaviors in private and public HEIs could have been different or not; such an issue can be a potential focus on further researches, considering the differences highlighted in literature between both types of organizations.

Furthermore, a few studies suggest that collaborators' reaction towards wide quality improvement programs like TQM may vary significantly, depending on the style of management. Further researches, focused on the hypothetical moderate role of leadership styles in the effects of TQM in work-related attitudes, and IP in the context of HEIs would be also very fruitful for significant advancements in organizational behavior scientific issues.



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