Developing the Task and Ego Orientation at Work Questionnaire

(TEOWQ)

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ABSTRACT

Although widely researched in education and sport, little research examines employee achievement goal orientations in a work context. This article provides validity and reliability evidence for the Task and Ego Orientation at Work Questionnaire (TEOWQ) from a study of 378 employees representing eight different occupational categories. Confirmatory factor analyses indicate that a re-specified model comprising two ego (“Being the best” and “being better than others”) and two task sub-factors (“Learning” and “Effort”) fit the data better than the original two-factor model. Temporal stationarity and stability of the constructs receive support. As hypothesized, task and task-effort orientations relate positively with persistence while ego orientation does not. The TEOWQ appears to be a valid and reliable instrument of achievement orientation in a work setting.

KEYWORDS
Achievement Goal Orientations, Ego Orientation, Success, Task Orientation, Measurement

INTRODUCTION

Individual success and the motivation to succeed are important elements in both sport and business. How an individual defines success is important to determining motivation. Achievement goal orientations indicate how individuals define success and, as such, influence achievement behaviour. Despite the large volume of theory and research on the construct of achievement goal orientations in educational and sport psychology, little research has examined employee achievement goal orientations in a work context. The purpose of this paper is to introduce a measure of achievement goal orientations to facilitate research on this construct within the business context. We begin by defining the achievement goal construct and demonstrating its significance to understanding employee behaviour and motivation.

Two main types of achievement goal orientations: task (often referred to as learning, or mastery) and ego (often referred to as performance) exist. A person with a task orientation defines success in terms of improving skill level. In contrast, a person with an ego orientation defines success in terms of superiority to competitors (Pintrich, 2000; Somuncuoglu and Yildrim, 1999). These differences in conceptualizing success are likely to impact on the types of goals individuals set and how individuals respond to externally set goals framed from either a task or ego perspective. Because the use and characteristics of goal setting relate to performance across a variety of tasks (Kanfer,
understanding an employee’s goal orientation may enable more effective motivation and performance management strategies.

ACHIEVEMENT GOAL ORIENTATIONS AND SUCCESS

Past research finds that goal orientations relate to perceptions of self-efficacy (Bell and Kozlowski, 2002; Cannon-Bowers, Rhodenizer, Salas, and Bowers, 1998). Individuals with predominantly a task orientation believe that their skills are dynamic and can be built upon, whereas primarily ego oriented individuals view their abilities as fixed. These differences in beliefs about skills have consequences for the attitudes, evaluation and management behaviours directed to one’s own and other’s performance. For example, Phillips and Gully (1997) report that individuals with task orientation were more positive in their self-efficacy than ego oriented individuals, who tend to view performance as a reflection of their innate ability for a skill set. Under high work loads, only ego oriented individuals show decreased job satisfaction (Van Yperen and Janssen, 2002).

Achievement goal orientations impact on positive work-related behaviour such as effort and seeking feedback. While individuals with a task orientation have been found to increase effort and persistence when faced with a challenge, ego oriented individuals tend to perceive a challenge as a personal lack of ability and assess the situation more unfavorably (Tuckey, Brewer, and Williamson, 2002). Tuckey et al. (2002) also found that goal orientation significantly relates to feedback seeking activities. In particular, task oriented individuals were more likely to actively seek out feedback than were ego oriented individuals.

Such research leads us to conclude that task orientation, compared to ego orientation, is associated with more positive employee behaviours such as self-efficacy, higher effort, persistence and feedback. A logical proposition, therefore, is that task orientation relates more positively to success than ego orientation. Some evidence supports this assertion. For example, past studies show that a positive relationship exists between task orientation and student scores and a non-significant relationship between ego orientation and student scores (Phillips and Gully, 1997). Butler (1993) finds
that induced goal orientations influence performance outcomes. Although task orientation relates to success (Dunteman and Bass, 1963), very little research examines this relationship and those that do may not generalize to workplace contexts as the bulk of studies have involved children and students.

ACHIEVEMENT GOAL ORIENTATIONS, MOTIVATION AND SUCCESS

While research by scholars such as VandeWalle and colleagues (1999) found that a key component to achieving job performance success is the desire to develop the required skills rather than simply a desire to appear to others as having high ability, further research examining the motivational mechanisms mediating the relationship between individual differences and job performance is required (VandeWalle, Brown, Cron, and Slocum, 1999). As such, a number of concepts in the organisational literature relating to individual orientation may affect motivation. These include action and personal perspective.

With regard to action, state-oriented individuals want to do something but lack action because they are too occupied with their thoughts, whereas action oriented people do not think about the problems and advantages in the task, rather they quickly translate the goals into actions (Frese, Fay, Hilburger, Leng, and Tag, 1997). Personal initiative involves “taking an active and self-starting approach to work and going beyond what is formally required in a given job” (Frese et al., 1997, p. 140). Personal initiative is goal directed and action oriented. The specific task heavily influences goals. However, individuals go through a redefinition or interpretation process to translate the goal from the task. The worker interprets that a certain quality should be achieved in such a situation (Frese et al., 1997). This finding suggests that when an employee gets a task he or she can translate the achievement of that task as either gaining skills or status (i.e. task oriented or ego oriented). But whether personal initiative leads to adaptive or maladaptive behaviours may depend on whether one is task or ego oriented.

To this point, we have demonstrated the potential importance of the construct of achievement goal orientation to the understanding and prediction of success within an organisational context. We have also shown that the construct may be useful in understanding how individual differences in
orientations to success link with motivational orientations such as action-orientation and personal initiative as well as motivational characteristics of jobs and the work context. Development of a measure of achievement orientation for the work context would enable researchers to identify the relationships among these constructs.

MEASUREMENT ISSUES

The Task and Ego Orientation in Sport Questionnaire (TEOSQ) developed by Duda and Nicholls (Duda, 1989; Duda and Nicholls, 1992) has been widely used in sport psychology research to measure these two orientations, with more than 70 published studies using it as a measurement instrument between 1992 and 1998 alone (Duda and Whitehead, 1998). Unfortunately, organisational research is lacking a measure parallel to the TEOSQ, to assess employee achievement motivations. Such a measure would enable organisations to assess the “ways in which people manage their thoughts and actions while working toward an outcome” (Lee, Sheldon, and Turban, 2003, p. 256) and, therefore, help leaders influence achievement goals towards more adaptive orientations. The adaptation of the TEOSQ and its validation in work contexts would enable organisations to improve self-efficacy, feedback seeking actions, and success. It also would enable research into the effect of environmental features on individuals’ achievement orientation and associated motivation.

In order to address this gap, we have undertaken a study to provide preliminary data on the psychometric characteristics of the Task and Ego Orientation at Work Questionnaire (TEOWQ), an adaptation of the TEOSQ to a work setting. In light of previous research (Duda, 1993), we hypothesized that task orientation would, and ego orientation would not, be associated with persistence. Thus, while individuals who are ego oriented and have high perceived competence tend to show sustained effort in a specific activity, ego oriented individuals with a low perceived competence are likely to adopt a maladaptive achievement behavioural pattern characterized by reduced efforts. In contrast, task oriented individuals base subjective success and perceived competence on a more controllable outcome, namely personal improvement. As a result of their orientation, they are more motivated and likely to persist longer in face of failure.
METHOD
Participants were 378 employees (185 males, 188 females, and 5 of unspecified gender) ranging in age from 18 to 64 (M = 35.59; SD = 10.48). They represented eight different occupational categories including professionals (n = 132), managers/administrators (n = 103), clerks (n = 60), paraprofessionals (n = 44); salespersons (n = 24), tradespersons (n = 5), laborers (n = 2) and plant and machine operators (n = 2).

INSTRUMENTS

Demographic Questionnaire (DQ)
Demographic information was obtained through a short questionnaire assessing age, sex, level of education, occupation, employment status (full-time or part-time), length of work experience in current position, field and organisation, supervision accountabilities, number of supervised people, modus of work evaluation (qualitative or quantitative) and type of work (collective/team or individual).

The Task and Ego Orientation at Work Questionnaire (TEOWQ)
To construct a measure of achievement goal orientation for work, we modified the items of the Task and Ego Orientation in Sport Questionnaire (TEOSQ), a measure of achievement goal orientation in sport, to suit a work setting. Organisational psychology experts, human resource managers and a group of MBA students verified the content validity of these items by evaluating whether the instructions and items of the TEOWQ were clear, understandable and relevant to employees. Following the evaluators’ suggestions, minor changes were made in the wording of several items. The same group of experts reassessed and verified the adequacy of the content validity and appropriateness of the amended version of the TEOWQ. Table 1 reports the original items of the TEOSQ and its modified version for work (TEOWQ).

As the factor analysis results of a pilot study conducted on a sample of 224 employees revealed that item 12 of the TEOWQ did not load on any of the achievement goal orientation dimensions, it was excluded from the questionnaire. At present, the TEOWQ is a 12-item
questionnaire that asks respondents to indicate how much they personally agree each statement reflects when they feel most successful at work. Responses are indicated on a 5-point Likert-type scale with 1 = strongly disagree and 5 = strongly agree.

**TABLE 1: Original Items of the TEOSQ and Its Modified Version for Work (TEOWQ)**

<table>
<thead>
<tr>
<th>The Task and Ego Orientation in Sport Questionnaire</th>
<th>The Task and Ego Orientation at Work Questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel most successful in sport when …</td>
<td>I feel most successful at work when …</td>
</tr>
<tr>
<td>1. I’m the only one who can do the play or skill.</td>
<td>1. I’m the only one who can do the job.</td>
</tr>
<tr>
<td>2. Something I learn makes me want to go and practice more.</td>
<td>2. I learn a new skill and it makes me want to put more effort into work.</td>
</tr>
<tr>
<td>3. I can do better than my team-mates/friends.</td>
<td>3. I can do better than my colleagues.</td>
</tr>
<tr>
<td>4. Others can’t do as well as me.</td>
<td>4. Others can’t do as well as me.</td>
</tr>
<tr>
<td>5. I learn something that is fun to do.</td>
<td>5. I enjoy learning something.</td>
</tr>
<tr>
<td>6. Others mess up and I don’t.</td>
<td>6. Others make mistakes and I don’t.</td>
</tr>
<tr>
<td>8. I work really hard.</td>
<td>8. I work really hard.</td>
</tr>
<tr>
<td>9. I score the most points/goals, have the fastest time, etc.</td>
<td>9. I achieve a higher standard than others in my area of work.</td>
</tr>
<tr>
<td>10. I learn a new skill and it makes me want to practice more.</td>
<td>10. A new skill I learn makes me more enthusiastic at work.</td>
</tr>
<tr>
<td>11. I’m the best.</td>
<td>11. I’m the best in my area of work.</td>
</tr>
<tr>
<td>12. A skill I learn really feels right.</td>
<td>12. A skill I learn really suits the way I work*</td>
</tr>
</tbody>
</table>

*Note.* *The current version of the TEOWQ (the version used in the present study) does not include item 12.*

**Self-rating of persistence**

Self-rating of persistence was measured with the item “Compared to the best in the country, how well do you persevere in striving towards the achievement of your work goals?” using a 100 point percentile ranking where 100 corresponded to the most persistent and 0 to the least persistent employee in the country.

**PROCEDURE**

All of the participants completed the TEOWQ as well as a background information form on one occasion. One hundred and fourteen participants completed the TEOWQ on two occasions. The interval between the two assessments was approximately two months (8 to 10 weeks). Additionally, 154 participants provided self-ratings of persistence at work. Participation was voluntary and responses were anonymous.
DATA ANALYSIS

Several hypothetical models of responses to the TEOWQ were tested through confirmatory factor analysis (CFA) using the maximum likelihood method (ML). These models were based on the factorial structures observed for the TEOSQ.

Two competing models were hypothesized and tested. These were:

a) An orthogonal two-factor model with two first-order factors (Ego orientation and Task orientation).

b) A three-factor model with a first-order orthogonal Ego orientation factor and two first-order oblique Task orientation factors (Effort and Learning).

RESULTS

Orthogonal two-factor model with two first-order factors

The traditional model of the responses to the sport version of the questionnaire (i.e. a 2-orthogonal-factor model) was tested via Confirmatory Factor Analysis (CFA) on the TEOWQ. We hypothesized that items 1, 3, 4, 6, 9 and 11 would load on an Ego Orientation factor and items 2, 5, 7, 8, 10 and 13 would load on a Task Orientation factor. No significant correlation was expected between Ego and Task Orientations. Examination of the fit indices showed that the model had a poor fit to the data, as RMSEA, NNFI and CFI did not reach the adopted cut-off values (See Table 2).

Table 2: Comparison of Indices of Fit amongst the Hypothesized and Re-specified Measurement Models

<table>
<thead>
<tr>
<th>Index</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3 (re-specified and hierarchical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean $\chi^2$ (SE)</td>
<td>247.96 (0.40)</td>
<td>198.92 (0.40)</td>
<td>143.92 (0.36)</td>
</tr>
<tr>
<td>AIC</td>
<td>242.83</td>
<td>194.64</td>
<td>142.37</td>
</tr>
<tr>
<td>CAIC</td>
<td>361.27</td>
<td>318.02</td>
<td>260.81</td>
</tr>
<tr>
<td>CFI</td>
<td>0.88</td>
<td>0.92</td>
<td>0.95</td>
</tr>
<tr>
<td>SRMR</td>
<td>0.070</td>
<td>0.065</td>
<td>0.057</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.083</td>
<td>0.068</td>
<td>0.058</td>
</tr>
</tbody>
</table>

The highest uniqueness was observed amongst some of the items underlying the Task orientation dimension of the TEOWQ, indicating that the task dimension might not be best represented by a single factor. Inspection of the standardized residual covariances and modification indexes suggested that items 8 and 13 might gauge a Task Effort factor which is, to a certain extent,
distinguishable from the other four learning-focused items of the Task orientation scale. These results indicated that a three-factor model with a first-order orthogonal Ego orientation factor and two first-order oblique Task orientation factors (Effort and Learning) might fit the data better than the original two-factor model.

**Three-factor model with a first-order orthogonal Ego Orientation factor and two first-order oblique Task Orientation factors (Effort and Learning)**

In accordance with previous research suggesting that the task orientation dimension occasionally splits into an Effort and a Learning factor (Duda and Whitehead, 1998), a 3-factor model of the responses to the TEOWQ was tested. The model comprised one Ego Orientation factor encompassing items 1, 3, 4, 6, 9 and 11 and two correlated Task factors. The Task-Effort factor consisted of items 8 and 13, whereas the Task-Learning factor encompassed items 2, 5, 7 and 10. Examination of the fit indices showed that this model reproduced the observed data with greater accuracy than the previous model (See Table 2). However, two out of three fit indices (CFI and RMSEA) did not reach the cut-off values proposed by Hu and Bentler (1999).

Item 5 had the lowest loading (0.49) and, consequently, the highest uniqueness of all the items of the TEOWQ, with over 75% of unexplained variance. Task-Effort Orientation accounted on average for 61% of its items' variance and Task-Learning Orientation for 34.63%. Omegas were .80 for Ego, .77 for Task-Effort and .71 for Task-Learning Orientation. The two Task Orientation scales were moderately positively correlated (Bootstrapped mean $r = .69$; SE = 0.06; 95% CI = 0.58 – 0.80).

As noted in previous studies on the factorial structure of the sport version of the questionnaire (Chi and Duda, 1995), analysis of the loadings and modification indices suggested that the error terms of items 9 and 11 of the Ego Orientation scale were positively correlated, indicating that the Ego Orientation might also split into two correlated first-order factors. In summary, the present CFA implied that a model with two oblique Task Orientation factors (Task-Effort with items 8 and 13; Task-Learning with items 2, 7 and 10 and excluding item 5) and two oblique Ego Orientation factors
(“Being the best” with items 9 and 11; and “Being better than others” with items 1, 3, 4 and 6) would fit the data better than the previous two models.

**Re-specified model:** Two oblique first-order Ego Orientation factors and two oblique first-order Task Orientation factors

**Task Orientation factors**

All the selected fit indices indicated that the re-specified model of the responses to the TEOWQ fit the data reasonably well (See Table 2). As this was the best fitting model, we present parameter estimates based on this model. Table 3 shows the bootstrapped standardized factor loadings and uniqueness of the TEOWQ items for this model. The bootstrapped estimates of the standard errors of standardized loadings and uniqueness, which are simply the standard deviations of the parameter estimates computed across the 2000 bootstrap samples, are also reported. Finally, the table shows the 95% percentile bootstrap confidence intervals of the parameter estimates.

**TABLE 3: Bootstrap Estimates of Items’ Standardized Factor Loadings and Uniqueness of the TEOWQ Items (Re-Specified and Hierarchical Model)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Being the best</th>
<th>Being better than others</th>
<th>Uniqueness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Loading</td>
<td>SE</td>
<td>95% CI</td>
</tr>
<tr>
<td>1</td>
<td>.60</td>
<td>.05</td>
<td>.51-.69</td>
</tr>
<tr>
<td>3</td>
<td>.73</td>
<td>.04</td>
<td>.74-.85</td>
</tr>
<tr>
<td>4</td>
<td>.63</td>
<td>.06</td>
<td>.69-.83</td>
</tr>
<tr>
<td>6</td>
<td>.65</td>
<td>.04</td>
<td>.56-.73</td>
</tr>
<tr>
<td>9</td>
<td>.67</td>
<td>.05</td>
<td>.56-.76</td>
</tr>
<tr>
<td>11</td>
<td>.71</td>
<td>.05</td>
<td>.60-.81</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Task-Effort</th>
<th>Task-Learning</th>
<th>Uniqueness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Loading</td>
<td>SE</td>
<td>95% CI</td>
</tr>
<tr>
<td>2</td>
<td>.57</td>
<td>.07</td>
<td>.42-.70</td>
</tr>
<tr>
<td>7</td>
<td>.53</td>
<td>.07</td>
<td>.40-.65</td>
</tr>
<tr>
<td>8</td>
<td>.75</td>
<td>.08</td>
<td>.59-.90</td>
</tr>
<tr>
<td>10</td>
<td>.75</td>
<td>.07</td>
<td>.60-.87</td>
</tr>
<tr>
<td>13</td>
<td>.82</td>
<td>.06</td>
<td>.70-.94</td>
</tr>
</tbody>
</table>

*Note.* SE = standard error; 95% CI = 95% percentile confidence interval. Virtually identical estimates were observed for the hierarchical model, which was mathematically equivalent to the re-specified model.

All the item loadings were in the expected direction, higher than 0.50 and significant at a 0.01 probability level. “Being the best” accounted on average for 47.25% of the variance in the items theorized to measure the construct, whilst “Being better than others”, explained 42.85% of the
variance. Task-Effort Orientation accounted for 61.00% of its items’ variance, whilst Task-Learning explained 38.83% of the item variance. Following the recommendations of Bacon, Sauer and Young (1995), we analysed composite reliability (internal consistency) of the four dimensions of the TEOWQ by calculating coefficient omega with unequal weights. Composite reliability for “Being the best” was 0.64 and 0.76 for “Being better than others”. Composite reliability for Task-Effort Orientation was 0.77 and 0.68 for Task-Learning Orientation. The Ego Orientation dimensions were highly correlated (Bootstrapped mean r = .83; SE = 0.05; 95% CI = 0.72 – 0.93), and the Task Orientation dimensions moderately correlated (Bootstrapped mean r = .68; SE = 0.06; 95% CI = 0.56 – 0.80).

Hierarchical model

Given that two first-order factors loaded on each second-order factor, the hierarchical model was mathematically equivalent to the re-specified model with two sets of orthogonal factors (See Table 2). To identify the present model, which had less than three first-order factors per second-order factor, the second-order factor loadings for each orthogonal factor were constrained to be equal (Bollen, 1989).

All second-order loadings were significant. Examination of the loadings showed that both ego orientation sub-factors closely relate to a general Ego Orientation factor. In fact, the general Ego Orientation factor explained 90.9% of the variance of the first-order factor “Being the best” and 75.3% of the variance of “Being better than others”. Effort had the lowest loadings, whilst Learning, defining success as learning and practice, had the highest possible loading on a general Task Orientation factor (See Table 4). The general Task Orientation factor explained all of the Task-Learning variance and accounted for 41.4% of the Task-Effort variance.

<table>
<thead>
<tr>
<th>TABLE 4: Bootstrap Estimates of Standardized Second-Order Factor Loadings for the Hierarchical Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
| Ego
| Being the best  | .95          | .07  | .82-1.09        |
| Being better    | .87          | .05  | .77-.97         |
| Task
| Effort          | .64          | .07  | .52-.79         |
| Learning        | 1.07         | .14  | .83-1.09        |
Measurement invariance

The unconstrained model yielded a marginally adequate fit to the data (See Table 5). We then tested the models in which fixed-loading, fixed-structure and tight stationarity were imposed. None of the chi-square difference tests was significant and the changes in CFI were less than 0.01, suggesting the assumption of temporal stationarity for the current version of the TEOWQ is supported (See Table 5).

<table>
<thead>
<tr>
<th>TABLE 5: Results of CFA Testing Measurement Invariance of the TEOWQ across Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
</tr>
<tr>
<td>$\chi^2$ (df)</td>
</tr>
<tr>
<td>CFI</td>
</tr>
<tr>
<td>SRMR</td>
</tr>
<tr>
<td>RMSEA</td>
</tr>
<tr>
<td>$\chi^2$ (df)</td>
</tr>
</tbody>
</table>

Note. df = degrees of freedom. All $\chi^2$ non-significant at $p = .05$.

The correlations of primary interest were between the same factors at Waves 1 and 2. These represent the stability of the constructs. The stability was 0.77 for “Being the best”, 0.91 for “Being better than others”, 0.79 for Task-Effort and 0.85 for Task-Learning denoting high stability over time.

Construct validity

Significant positive correlations were found between employees’ self-ratings of persistence and the Task-Effort ($r_s = .25; p = .002$) and general Task Orientation scales ($r_s = .27; p = .001$). As expected, persistence was not significantly associated with the Ego dimensions.

DISCUSSION

The major aim of this investigation was to introduce and evaluate the factorial and construct validity, and temporal stability and invariance of a measure of achievement goal orientation at work, the Task and Ego Orientation at Work Questionnaire (TEOWQ). Confirmatory factor analyses yielded results similar to those of a recent study on the factorial validity of the TEOSQ, from which the TEOWQ derives. A model comprising two orthogonal sets (Ego and Task Orientation) with two first-order oblique factors or two orthogonal second-order factors with two subordinate factors best explains the responses to the TEOWQ. As noted earlier, the presence of fewer than three first-order
factors per second-order factor, the hierarchical and first-order models were mathematically identical and, therefore, fit the observed data equivalently well. Importantly, all the items loaded on the factors they were hypothesized to measure and the independence of task and ego orientations was confirmed.

Apart from showing a factorial structure similar to that of the TEOSQ, the responses to the TEOWQ displayed temporal stationarity (at least over a two-month period), a condition necessary to make meaningful inferences about longitudinal relationships. Additionally, the stability coefficients of the first-order achievement goal orientation factors were high (0.77 – 0.91) suggesting that they are relatively stable individual characteristics.

As observed in previous studies (Chi and Duda, 1995), ego orientation tended to split into highly correlated subscales – namely, a two-item “being the best” and a four-item “being better than others”. Chi and Duda (1995) maintained that the tendency of the two items “I’m the best” and “I score the most points/goals, have the fastest time, etc.” (“I achieve a higher standard than others in my area of work”, in the TEOWQ) to cluster together is due to the strong emphasis they both place on social comparison-based outcomes, which is found in individuals with a high ego orientation.

The present investigation has shown that task orientation, as gauged by the TEOWQ, is best viewed as a two-faceted construct comprising moderately correlated effort and learning components. Similar findings are reported for responses to the TEOSQ (Duda and Whitehead, 1998). With regards to effort orientation, we argue that it might not be appropriate to consider it an aspect of achievement goal orientation. In fact, effort is a process that can aid achievement, whether successful achievement is defined as improving one’s skills or being better than someone else. Whether exertion or effort on its own will be a subjective measure of success is likely to depend on the characteristics and complexity of the task. Hence, in our opinion, effort should be thought of as a dimension of achievement goal orientation at work unless and until sound empirical justification for not doing so is found.

With regard to how scores should be derived from the TEOWQ responses, the present study provides justification for the use of either four scale scores representing the TEOWQ first-order
factors (Being the best, Being better than others, Effort and Learning) or two total scores representing the higher-order factors (Ego and Task). Although further research is needed to establish the usefulness of the first-order factor scores and the total second-order factor scores in relation to a variety of external validity criteria (e.g. performance, persistence, group differences, attribution styles), the present findings suggest that the profile of four first-order scores (calculated as the mean value on the relevant items) will provide more information and a better diagnosis of employees’ achievement goal orientations than the two higher-order scores. However, second-order factor scores will be useful if comparing results of studies using the TEOWQ with previous investigations in the realm of achievement goal orientation.

Although, to date, no sound theoretical justification has been proposed for considering “being the best” and “being better than others” as separate ego orientation factors, we think that differentiating between the two could be advantageous and, ultimately, theoretically defensible. Therefore, future research should examine the differential adaptiveness and efficacy of the two above-mentioned components of ego orientation in relation to persistence, sustained effort, vulnerability to failure, and performance.

**CONCLUSION**

Although further research is needed to establish the construct validity of the TEOWQ, the results obtained in the present study provide preliminary support for it. In fact, similar to previous findings in the sport area (Duda, 1992), task and task-effort orientations were positively associated with persistence. Additionally, as hypothesized, no significant correlation was found between ego orientation dimensions and persistence. Collectively, the present findings on the psychometric characteristics of the TEOWQ are promising. The TEOWQ appears to be a valid and reliable instrument of achievement orientation in a work setting, which has the potential to assist the investigation of motivation at work.
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