



# Factorial validity, cross-cultural equivalence, and latent means examination of the organizational career growth scale in Italy and China

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## ABSTRACT

Organizational Career Growth scale (OCG scale) is a measure of employee perceptions of their chances of development and advancement within an organization. Despite the growing interest of scholars in this field, research using the OCG scale is in its early infancy. The current study aims to contribute to the validation of the OCG scale by testing its dimensionality and measurement invariance across Italian ( $N = 882$ ) and Chinese ( $N = 256$ ) samples. Structural Equation Modeling with Confirmatory Factorial Analysis, Multi-Group Confirmatory Factorial Analysis and latent means analysis were used. The four-factor model of the OCG scale prevailed both in the Italian and Chinese samples. Moreover, full metric and partial scalar invariance were achieved. Overall, the results supported the factorial validity and cross-cultural equivalence of the OCG scale. Latent means examination showed evidence of significantly higher latent means in the Chinese sample for three dimensions of the OCG scale (career goal progress, professional ability development, promotion speed) than in the Italian sample. Limitations, suggestions for future research and practical implications are discussed.

## KEYWORDS

Organizational career growth; factorial validity; measurement invariance; cross-cultural equivalence; confirmatory factorial analysis; structural equation modelling; latent variables means

## Introduction

Despite the recent trend that considers employees' careers as 'boundary-less' and 'protean' (Hall, 1996, 2004), recent studies have underlined the need to examine organizational career growth (OCG); i.e. employees' perceptions of the chances of development and advancement *within* an organization (McElroy & Weng, 2016). Conceptually, the purpose of OCG is to extend the focus of career management beyond the choices made by individuals in order to recognize that the role of the organization in managing careers it is crucial as well. Compared to career success,

which focuses on one's career over an employee's total employment history, OCG focuses on one's employment within a single organization. As such OCG has been closely linked to several important work outcomes, such as organizational commitment (e.g. Weng, McElroy, Morrow, & Liu, 2010), job satisfaction (e.g. Spagnoli, 2017), employee voice (Wang, Weng, McElroy, Ashkanasy, & Lievens, 2014), turnover intention (e.g. Chen, Hou, Li, Lovelace, Liu, & Wang, 2016), and performance (Spagnoli, 2017).

The OCG scale was developed by Weng and his colleagues (Weng & Hu, 2009; Weng & Xi, 2011) in China and it has been validated in a few other countries, such as Korea (Kim et al., 2016), and Turkey (Karavardan, 2014). Research on the OCG scale in China has actually reported two different dimensionality models: a three-factor version (Weng & McElroy, 2012), and the original four-factor model (e.g. Chen et al., 2016; Kim et al., 2016; Weng et al., 2010; Weng & Xi, 2010). The emergence of two different models of OCG may have been due to the high correlations between two of the scale's dimensions (i.e. promotion speed and remuneration growth); particularly in managerial samples (McElroy & Weng, 2016; Weng & McElroy, 2012). Further research is needed to better understand the dimensionality of the OCG scale in China and other countries.

This study contributes to the career management literature by showing the validity of OCG scale across two countries with different cultures; i.e. China and Italy. To date no research has adapted the OCG scale in Italy in order to test its cross-cultural equivalence. The purpose of this study is to examine the suitability of the OCG scale for use in Italy. In order to do so, we adopted the Milfont and Fischer's (2010) framework of cross-cultural measure equivalence. Specifically, dimensionality of the Italian version of the OCG scale, its dimensionality in a Chinese sample, measurement equivalence including Italian and Chinese samples, and latent means multi-group comparisons were assessed. A deeper overview of the characteristics of the OCG scale, and the details of the analyzes conducted follow.

### ***OCG consequences***

A definition of career growth was proposed by Jans (1989) who defined it as one's perceptions of the chances of development and advancement within an organization. However, with the emergence of the boundary-less career, the focus shifted away from considering career development and management in terms of traditional career paths within an organization. Instead, the emphasis shifted to the employee as the focal point for the management of career growth both within and across organizations (Baruch & Rosenstain, 1992). This shift toward individual choice reduced the role of the organization in employee career growth development. OCG, as initially proposed by Weng and his colleagues (2009, 2010), suggests that career growth might be better represented as a by-product of both the individual's perceptions and the organization's actions.

Actions taken by organizations over the past two decades, such as downsizing, flattening organizational structures, wage freezes, and automation, would appear to hinder career advancement within organizations, but career growth interventions on the part of organizations may still play a strategic role. For instance, managers of organizations, where, for example, layoffs and restructuring have been adopted, may use career growth interventions as a way to re-establish positive employee attitudes such as job satisfaction (Weng et al., 2010), among remaining employees. Moreover, career growth possibilities may also foster motivation to work and increase employees' performance. The role of organizations in career management is particularly important when it comes to retaining high-potential employees and knowledge workers who could contribute effectively and strategically to organizational performance (Spagnoli, 2017). These workers still have organizational-traditional careers including upward mobility and, to the degree that their skills are indeed rare, low inter-organizational mobility (Dries & Pepermans, 2008). Therefore, opportunities for career development provided by organizations could be one of the key elements for retaining knowledge workers (Horwitz, Heng, & Quazi, 2003). However, while such speculations and initial research is interesting and encouraging, research on the role of OCG in employees' work experience within an organization is still in its infancy.

### **OCG measurement**

One of the crucial research questions in this field is how OCG should be measured. According to Weng et al. (2010) and Weng and Hu (2009) OCG consists of four factors: career goal progress, that is, the degree to which one's current organization creates an environment that allows the person to meet their career goals; professional ability development, that is acquiring new knowledge, skills and abilities; promotion speed, or the degree to which the organization reinforces those accomplishments through promotions; and compensation, that is, the degree to which one's remuneration may increase. Career goal progress and professional ability development account for intrinsic career growth, whereas promotion speed and compensation involve extrinsic career growth. According to Weng and McElroy (2012) the multi-dimensional view of OCG is consistent with both Porter and Steers (1973) met expectation hypothesis and the psychological contract (Rousseau, 2004), since

this multi-dimensional conceptualization implies that OCG is both a function of the employees' own efforts in making progress toward their personal career goals and acquiring professional skills within the organization and the organization's efforts in rewarding such efforts, through promotions and salary increases. (p. 257)

Two different models of the OCG scale provided evidence of good fit in Chinese samples. One, a three-factor version, in which promotion speed and compensation were collapsed into one factor, provided a better fit for an exclusively managerial Chinese sample (Weng & McElroy, 2012); while the original four factor model,

was deemed to be more suitable for heterogeneous samples (e.g. Chen et al., 2016; Kim et al., 2016; Weng et al., 2010; Weng & Xi, 2010). Moreover, the four-factor structure was replicated in both Korea and Turkey (Karavardan, 2014; Kim et al., 2016, respectively). However, research is needed to assess OCG scale's structure in other cultures. Accordingly, the current study further examined different models of the OCG scale to identify which one best fits the data of Italian and Chinese samples.

### ***Cross-cultural OCG examination***

According to Sullivan and Baruch (2009) studies of workers in non-Western countries are especially important because most of what is known about careers is based on studies conducted in Western countries, making Western models the 'the facto standard' against which careers in other countries are compared. As Briscoe, Hall, and Mayrhofer (2012) posited, cultures affect careers through multiple sets of influences, such as individual values toward work and career and the organizational values embedded in organizational HRM practices. Since Italy and China constitute two countries representing different cultural values (Hofstede, 2010), comparing the conceptual framing, measurement models equivalence and scores on the OCG scale dimensions is of utmost interest. However, before comparing results of a scale in two or more culturally different groups, scholars should verify if four levels of equivalence have been achieved (Milfont & Fischer, 2010): (1) functional equivalence (does the construct exist in all groups studied); (2) structured equivalence (are indicators related to the construct in a non-trivial way); (3) metric equivalence (are loading weights identical across groups); and (4) scalar invariance (are intercepts identical across groups). In the current study measurement invariance testing within the framework of structural equation modelling was used as a robust procedure for investigating the equivalence of the OCG scale using Italian and Chinese data.

After ascertaining the measurement equivalence of a scale among culturally different groups, one can then compare scale scores across groups. In particular, in the current study differences between the Chinese and Italian samples might be due to a number of factors. For example, scale differences might be due to different cultural values. Italian culture values sociability, assertiveness, self-expression (Casiglia, Lo Coco, & Zappulla, 1998), whereas Chinese culture emphasizes self-restraint, cautiousness, and cooperation (Chen, Liu, & Li, 2000). In general, Italian culture tends to align more with individualism, whereas the Chinese culture is more consistent with collectivism (Hofstede, 2010). In the present study we were unable to test for specific cultural differences, but scale differences might also be due to differences in the economic development level of these two countries. For example, Italy is still facing one of its major economic and financial crises of the century, while China is currently one of the most important economic powers in the world. This economic difference suggests that career advancement in Italy is

more limited than it is in China where greater advancement possibilities exist. This leads us to the following hypothesis:

*H1: Higher scores of the OCG scale dimensions will be observed in the Chinese sample compared to the Italian sample.*

## **Method**

### **Sample**

A total of 1151 participants, 895 in Italy and 256 in China, were involved in the study.

#### **Italian sample**

Italian sample was split in two randomly extracted sub-samples. The first Italian sub-sample (sample A,  $N = 598$ ) was used to test the dimensional structure of the OCG scale by conducting Confirmatory Factor Analysis (CFA). The second Italian sub-sample (sample B,  $N = 297$ ) was included in the Multi-group Confirmatory Factorial Analysis (MCFAs) with the Chinese sample.

The Italian sub-sample A included 298 (49.8%) men and 300 (50.2%) women. Their age ranged between 18 and 67 years old (Mean = 40.37, St. Dev. = 12.22). Educational level was: primary education 1.4%; junior high school 13%; high school 51.3%; university 31.8%; other 2.4%. Marital status was: single 35%; married/cohabitant 58.6%; divorced 5.3%; widowed 1%. Their tenure was: 15.2% less than one year; 13.5% one to two years; and 70.4% above two years, with 0.8% not responding to the tenure question. Most of them worked in the service sector (83.4%), with the remainder coming from the industrial (13.5%), and agricultural (1.2%) sectors. Most respondents held a permanent job (74.2%), while the remaining had fixed-term jobs (25.8%).

The Italian sub-sample B included 158 (54.1%) men and 134 (45.9%) women. Their age ranged between 19 and 64 years of age (Mean = 38.74, St. Dev. = 12.34). Their tenure was: 19.9% less than one year; 15.4% from one to two years; and 62.7% above two years, with 2.1% not responding to the tenure question. Educational level was: primary education 1.4%; junior high school 13.4%; high school 45.5%; university 36%; other 3.4%. Marital status was: single 44.9%; married/cohabitant 48.6%; divorced 4.1%; widowed 1.4%. Most of them worked in the service sector (83.6%), with the remainder working in the industrial (14%), and agriculture (1.7%) sectors. Most had permanent jobs (67.5%), while the remainder had a fixed-term job (23.5%). All in all, both samples constituted a stratified and representative sample of the Italian working population.

#### **Chinese sample**

They were 143 men (55.9%) and 113 women (44.1%) working in University administration. Their age was distributed as follow: 14.8% were less than 30 years

old; 39% between 31 and 40; 28.1% between 41 and 50; and 17.6% were more than 51 years old. Educational level was: primary education 4.7%; junior high school 34%; high school 61.3%. Their tenure was as follow: 8.2% no more than two years; 10.2% between 3 and 5 years; 18.8% between 6 and 10 years and the rest 63.9% had worked in their current organization for more than 11 years.

### **Procedure**

The original OCS scale was developed in China by Weng and Hu (2009). However, the authors provided also an English version of the scale in order to facilitate the cultural adaptation of the scale in other languages. Thus, in order to ensure equivalence of meaning for the items between the Italian and the English versions of the OCG scale, a rigorous translation process was used. This included forward and backward translation and pilot testing. The translation process began with the translation of the English version into Italian by a bilingual translator; then, another bilingual translator (a native English speaker) independently translated the OCG scale back into English. The translators then compared the back translation to assess the item-by-item consistency. Before using the OCG scale, a pilot test was conducted to assess the readability of the items in the scale. The use of a pilot test allows for assessing the degree to which respondents understand the concepts being referred to in the questions. Assessing the familiarity of the respondents with the questions being asked helps ensure content validity of the items (Van de Vijver & Hambleton, 1996). This instrument was administered to 10 individuals, and no significant word changes were made indicating adequate readability and familiarity of the items' content.

In Italy data were collected through an anonymous questionnaire, administered and returned by hand. Administration was conducted through the snowball technique involving graduated students who voluntarily took part in the data-collection phase after a training session. As part of a class assignment meant to integrate the research experience with the classroom experience, each of these students received four questionnaires to distribute to four workers. The graduate students involved were assigned specific targets for the questionnaire administration based on gender and age, so that a gender and age balanced sample could be achieved among the workers surveyed. Particular attention was dedicated to training the involved students. All participants were informed of the anonymity of the survey. At the end of the administration 927 questionnaires were returned. Of these, 32 responses were deleted due to missing values, resulting in a usable sample of 895 Italian employees.

In China, data were also collected through an anonymous questionnaire, administered and returned by hand. Participants were recruited from 15 Universities by contacting their HR departments and getting their support in collecting the data. Twenty participants in each university agreed to complete the questionnaire, and we received 275 responses. Of these, 19 responses were deleted due to missing values, resulting in a Chinese sample of 256 usable responses.

## Measures

We used the OCG Scales developed by Weng and his colleagues (Weng & Hu, 2009; Weng & Xi, 2011) to measure the four dimensions of career growth: career goal progress (4 items), professional ability development (4 items), promotion speed (4 items), and remuneration growth (3 items). The items were answered using a 5-point scale ranging from *totally disagree* (1) to *totally agree* (5). Both the English and the Italian versions of the scale are presented in Table 2.

## Data analyzes

The validity of the OCG scale's factorial structure was first examined by testing separately its dimensionality in the Italian and Chinese samples, and then, by testing its measurement invariance, which is composed of several steps including configural, metric, and scalar invariance (e.g. Brown, 2006; Byrne, 2004). Measurement invariance involved the simultaneous examination of the data from the Italian and Chinese samples.

First, the dimensionality of the OCG scale was assessed using the Italian sub-sample A. Three models were compared: a one-factor model (Model 1); a three-factor model (Model 2); and the original four-factor model (Model 3). In the three-factor model, promotion speed and compensation were collapsed into one factor as suggested by the results of the study of Weng and McElroy (2012). CFA through Structural Equation Modelling using the Maximum Likelihood (ML) method was conducted in order to test the dimensionality of the scale on the Italian sub-samples A and B, and on the Chinese sample. CFA represents a kind of structural equation modelling that deals specifically with measurement models. The aim of this analysis is to examine the relationship between observed measures and latent variables, or factors. According to Byrne (2001) the use of the ML method in estimating CFA assumes that the following conditions have been met: (a) the sample is very large (asymptotic); (b) the distribution of the observed

**Table 1.** Fit indices for CFA and MCFA of the OCG in Italy and China.

Models	$\chi^2$ (df)	CFI	NFI	RMSEA	AIC
Model 1: Italian sub-sample A One-factor	3241.229 (90)	.649	.643	.245	3301.229
Model 2: Italian sub-sample A Three-factor	761.305 (87)	.925	.916	.115	827.305
Model 3: Italian sub-sample A Four-factor	496.503 (84)	.954	.945	.092	568.503
Model 4: Chinese sample Four-factor	283.334 (84)	.950	.930	.096	355.334
Model 5: Chinese sample Three-factor	956.855 (87)	.773	.757	.204	1070.893
Model 6: Chinese sample One-factor	2070.819 (90)	.496	.487	.298	2185.461
Model 7: Italian sub-sample B Four-factor	270.748 (84)	.954	.935	.087	342.748
Model 8: Configural invariance	554.094 (168)	.952	.933	.065	698.090
Model 9: Full metric invariance*	621.988 (190)	.946	.925	.065	721.988
Model 10: Full scalar invariance*	741.840 (205)	.933	.910	.069	871.840
Model 11: Partial scalar invariance	715.924 (204)	.936	.913	.068	847.924
Model 12: Latent mean equivalence	652.042 (198)	.943	.921	.065	796.042

Notes: \* = The comparison of Models 9 and 10 resulted in some degree of noninvariance of intercepts based on the Chi square difference test and change in CFI value.



**Table 2.** Factor loadings for the Italian version of the OCG scale.

Items	Career goal progress	Professional ability development	Promotion speed	Remuneration growth
1. My present job moves me closer to my career goal				
1. <i>Il mio lavoro attuale mi aiuta a raggiungere i miei obiettivi di carriera</i>	.87			
2. My present job is relevant to my career goals and vocational growth				
2. <i>Il mio lavoro attuale è importante per i miei obiettivi di carriera e per la mia crescita professionale</i>	.92			
3. My present job sets the foundation for the realization of my career goals				
3. <i>Il mio attuale lavoro predispone le basi per la realizzazione dei miei obiettivi di carriera</i>	.95			
4. My present job provides me with good opportunities to realize my career goals				
4. <i>Il mio lavoro attuale mi fornisce buone opportunità per realizzare i miei obiettivi di carriera</i>	.95			
1. My present job encourages me to continuously gain new and job-related skills		.90		
1. <i>Il mio lavoro attuale mi stimola a migliorare costantemente le mie capacità lavorative</i>		.90		
2. My present job encourages me to continuously gain new job-related knowledge		.93		
2. <i>Il mio lavoro attuale mi stimola a migliorare costantemente le mie conoscenze lavorative</i>		.93		
3. My present job encourages me to accumulate richer work experiences		.87		
3. <i>Il mio lavoro attuale mi stimola a fare esperienze lavorative molto arricchenti</i>		.87		
4. My present job enables me to continuously improve my professional capabilities		.89		
4. <i>Il mio lavoro attuale mi permette di migliorare costantemente le mie capacità professionali</i>		.89		
1. My promotion speed in the present organization is fast			.82	
1. <i>I tempi di avanzamento della mia carriera all'interno di questa organizzazione sono piuttosto rapidi</i>			.82	
2. The probability of being promoted in my present organization is high			.87	
2. <i>La probabilità che io possa avere un avanzamento di carriera all'interno di questa organizzazione è alta</i>			.87	
3. Compared with previous organizations and attainable jobs, my position in the present one is ideal				

3. <i>La mia posizione lavorativa attuale è ideale se comparata con le posizioni ricoperte in precedenza in altre organizzazioni</i>	.66
4. <i>Compared with my colleagues, I am being promoted faster</i>	.64
4. <i>I miei avanzamenti di carriera sono stati più rapidi di quelli dei miei colleghi</i>	
1. <i>My salary is growing quickly in my present organization</i>	.84
1. <i>Il mio stipendio è aumentato velocemente in questa organizzazione</i>	
2. <i>In this organization, the possibility of my current salary being increased is very large</i>	.84
2. <i>In questa organizzazione la possibilità che il mio stipendio aumenti è molto alta</i>	
3. <i>Compared with my colleagues, my salary has grown more quickly</i>	.75
3. <i>Il mio stipendio è aumentato più rapidamente di quello dei miei colleghi</i>	

variables is multivariate normal; (c) the hypothesized model is valid (West, Finch, & Curran, 1995); and (d) the scale of the observed variables is continuous. In the current study, conditions a, c and d were met given that: sample size was large enough for testing the model; the hypothesized model has already been validated in the literature (Weng & McElroy, 2012; Weng et al., 2010) and the scale of the observed variable is continuous. Condition b, regarding the normality distributions of the items, will be presented in the results section.

### ***Configural invariance***

Configural invariance is achieved when the model holds in all the groups included in the analysis. Multi-Group Confirmative Factorial Analysis (MGCFA) through Structural Equation Modelling using the ML method was conducted in order to test configural and measurement invariance. MGCFA consists of simultaneous CFAs in two or more groups, offering a strong analytic framework for evaluating the equivalence of measurement models across distinct groups (Brown & Moore, 2012). The indices of fit considered for testing configural invariance were: the Chi square, the Comparative Fit Index (CFI), the Normed-fit index (NFI); the Root Mean Square Error of Approximation (RMSEA); and the Akaike Information Criterion (AIC). The chi-square for the model is also called the discrepancy function, likelihood ratio chi-square, or chi-square goodness of fit. If the chi-square is not significant, the model is regarded as acceptable. If the chi-square is significant, the model is regarded, at least sometimes, as unacceptable. However, many researchers disregard this index if both the sample sizes exceed 200 (e.g. Bentler & Bonnet, 1980; Hooper, Coughlan, & Mullen, 2008) or so, and other indices indicate that the model is acceptable. Since in the current study the size of examined samples are > 200, chi-square was considered to be the least important fit criterion. CFI assesses the extent to which the tested model is superior to an alternative model in reproducing the observed covariance matrix (Bentler, 1990; McDonald & Marsh, 1990). The CFI index varies from 0 to 1 and a cut-off criterion of CFI > .90 is needed in order to ensure that mis-specified models are not accepted (Hooper et al., 2008). The NFI assesses the model by comparing the  $X^2$  value of the model to the  $X^2$  of the null model. Values for this statistic range between 0 and 1, with Bentler and Bonnet (1980) recommending values greater than 0.90 indicating a good fit. The RMSEA introduces a correction for lack of parsimony since, all other things being equal, more complex models are penalized. A cut-off value close to .06 (Hu & Bentler, 1999) or a stringent upper limit of .08 (Steiger, 2007) seems to be the general consensus among researchers. The AIC is a comparative measure of fit. According to Burnham and Anderson (2004), lower values indicate a better fit and so the model with the lowest AIC is the best fitting model.

### ***Measurement invariance***

Thus, after configural invariance has been established, measurement invariance includes both metric and scalar invariance analyzes. They were conducted on the

OCG scale to test if the factor loadings and the intercepts were the same in all the groups studied. The fit of a constrained model, including all the fixed factor loadings, was compared to the fit of the free-to-vary model to test full metric invariance. Following Chen (2007) and Cheung and Rensvold (2002), CFI and RMSEA were used as the main indexes to test metric and scalar invariance. The cut-off points for rejection of metric and scalar invariance are established as an increase of RMSEA by .015 and a decrease of CFI by .01 (Chen, 2007; Cheung & Rensvold, 2002). Once metric invariance has been established, in order to compare the factors' means of the different samples, it is important to explore whether the scores from the different groups have the same origin; i.e. whether the intercept across the groups is the same (scalar invariance). After measurement invariance was established, latent mean examination to compare Italian and Chinese groups was conducted.

AMOS 20 was used to run CFA, MCFA, and latent means examination, whereas SPSS 20 was used for data managing, preliminary analysis of the data, correlation and reliability analysis.

## Results

### *Dimensionality of the Italian version of the OCG scale*

Before assessing the fit of the one-factor, three-factor and four-factor models on the Italian sub-sample A, univariate and multivariate normality of the variables was inspected through output available in AMOS 20. Kurtosis, skewness and Mardia's coefficients were examined. All skewness and kurtosis values were between  $-2.0$  and  $+2.0$  and, thus, demonstrating univariate normality (e.g. George & Mallery, 2010; Gravetter & Wallnau, 2014). However, the multivariate value of Mardia's coefficient (Mardia, 1970) was 101.060, and its normalized value was 54.716 indicating a moderate multivariate non-normality. Thus, according to Gao, Mokhtarian, and Johnston (2008) Mahalanobis values were inspected to check if some outliers could be identified and eventually deleted. After 13 outliers were deleted from the analysis Mardia's coefficient was 60.167, and its normalized value was 32.220. Although Mardia's coefficients still indicated a moderate form of multivariate non-normality, they were reduced by about 40% confirming that the 13 outliers had an evident effect on the distribution. At this point in the analysis we decided to not go ahead with deleting other possible outliers in order to avoid compromising the analysis' power and because large sample sizes can reduce the consequences of multivariate non-normality (Hair, Black, Babin, & Anderson, 2010). As a consequence, we used the bias-corrected bootstrap method with 500 bootstrap samples as an approach for handling the presence of non-normal data (e.g. Byrne, 2001; Dimitrov, 2010; West et al., 1995).

Results of the Confirmatory Factorial Analysis using the ML method are presented in Table 1, which shows that the model best fitting the data is the original four-factor model (Model 3). Specifically, all the fit indices for the four-factor model were satisfactory (CFI = .961; NFI = .955; RMSEA = .079). Moreover, Model 3 showed the lowest AIC (644.908) indicating that this four-factor model, comparing to the other models (M1-AIC = 4423.810; M2-AIC = 1025.364), was the best. Thus, in sum, these results indicated that the four-factor model had a satisfactory fit. Some of the fit indices for the three-factor model were satisfactory (CFI = .931; NFI = .925), as well, however, overall the results indicated a better fit for the four-factors model. All the factor loadings were statistically significant ranging from .64 to .95. Table 2 presents the factor loadings for the Italian version of the OCG scale. Table 3 shows the confidence intervals and p values for each estimated parameter (factor loading) in the CFA using the bootstrap method. None of the confidence intervals contained 'zero' and all the  $p$  values were  $< .01$  indicating stability of the estimated parameters.

Table 4 reports the means, standard deviations and inter-correlations among the four OCG factors for the Italian sub-sample A. Reliabilities assessed through Cronbach's alpha coefficients were all excellent and are also reported in Table 3 in the diagonal, that is: .97 for career goals; .95 for professional abilities; .85 for promotion speed; and .86 for remuneration growth.

**Table 3.** Results of the bootstrap (regression weights) for the Italian sub-sample A.

Parameter	Estimate	Lower	Upper	$p$
PAD item 4	.976	.933	1.021	.003
PAD item 3	.988	.950	1.037	.003
PAD item 2	.982	.949	1.017	.005
PAD item 1	1.000	1.000	1.000	–
CGP item 4	1.095	1.057	1.145	.003
CGP item 3	1.089	1.048	1.139	.003
CGP item 2	1.034	1.000	1.075	.004
CGP item 1	1.000	1.000	1.000	–
PS item 4	.818	.743	.890	.004
PS item 3	.790	.726	.852	.005
PS item 2	1.046	.994	1.107	.004
PS item 1	1.000	1.000	1.000	–
RG item 3	.869	.805	.944	.003
RG item 2	.963	.901	1.034	.005
RG item 1	1.000	1.000	1.000	–

Note: PAD = Professional abilities development; CGP = Career goal progress; PS = Promotion speed; RG = Remuneration growth; Confidence limit of the estimates was 90%.

**Table 4.** Means, standard deviations, inter-correlation and reliabilities (in diagonal) of the four OCG factors for the Italian sub-sample A.

Factors	$M$	SD	1	2	3	4
1. Career goals progress	3.27	1.23	.97			
2. Professional abilities development	3.66	1.11	.72	.95		
3. Promotion speed	2.65	1.07	.64	.49	.85	
4. Remuneration growth	2.15	1.07	.46	.34	.70	.86

Note:  $n = 895$ ; Coefficient alpha internal consistency reliabilities are reported on the diagonal in italic.

### ***Cross-cultural equivalence examination: measurement invariance***

The above analyzes suggest that it is appropriate to use the four-factor model to test the configural invariance using MGCFA including the Italian sub-sample B and the Chinese sample (Model 8). However, following Byrne (2001), a pre-condition for assessing configural invariance is the model fit's examination of all the groups involved. Thus, the fit of the four-factor model was tested also on the Italian sub-sample B (Model 7). Moreover, the fit of the one-factor, three-factor and four-factor models were assessed in the Chinese sample (Models 4–6). Before assessing the fit of the models, univariate and multivariate normality of the variables were inspected for the Italian sub-sample B and for the Chinese sample. Kurtosis, skewness and Mardia's coefficients were examined. In the Italian sub-sample B all skewness and kurtosis values were between  $-2.0$  and  $+2.0$  indicating that univariate normality was supported. However, the multivariate value of Mardia's coefficient (Mardia, 1970) was 93.957, and its normalized value was 35.850, indicating a moderate multivariate non-normality. Thus, Mahalanobis values were inspected to check if some outliers could have been identified. After five outliers were deleted from the analysis Mardia's coefficient was 58.930, and its normalized values was 22.295. Although Mardia's coefficients still indicated a moderate form of multivariate non-normality, they were reduced of about 38% confirming that the five outliers had an evident effect on the distribution. At this point of the analysis, we decided to not go ahead with deleting other possible outliers so as to not compromise the analysis' power and because large sample size can reduce the multivariate non-normality (Hair et al., 2010).

In the Chinese sample all skewness and kurtosis values were between  $-2.0$  and  $+2.0$ , except for two kurtosis values (2.505, 2.076) indicating that univariate normality was slightly violated in two variables. The multivariate value of Mardia's coefficient (Mardia, 1970) was 92.532, and its normalized value was 32.779, indicating a moderate multivariate non-normality. Although the presence of some outliers could have been identified, in this case we decided to not compromise the size of the sample. However, as with Italian sample A, we employed the bootstrap procedure for estimating model parameters both in the Italian sub-sample B and in the Chinese sample, in order to handle the presence of non-normal data (e.g. Byrne, 2001; Dimitrov, 2010; West et al., 1995). Results, shown in Table 1, show that the model, which best fits the data in the Chinese sample, was the original four-factor model (Model 4: CFI = .95; NFI = .93; RMSEA = .096).

Table 5 shows confidence intervals and p values of each estimated parameter (factor loading) in the CFA for the four-factor model in the Chinese sample. All the intervals of confidence did not contain 'zero' and all the p values were  $< .01$  indicating stability of the estimated parameters. Table 6 reports the means, standard deviations, and the inter-correlations among the four OCG factors for the Chinese sample.

**Table 5.** Results of the bootstrap (regression weights) for the Chinese sample.

Parameter	Estimate	Lower	Upper	<i>p</i>
PAD item 4	.957	.845	1.178	.005
PAD item 3	.905	.791	1.101	.005
PAD item 2	.968	.921	1.001	.009
PAD item 1	1.000	1.000	1.000	–
CGP item 4	1.025	.961	1.119	.002
CGP item 3	.958	.878	1.053	.005
CGP item 2	.956	.881	1.035	.005
CGP item 1	1.000	1.000	1.000	–
PS item 4	.943	.871	1.010	.005
PS item 3	.990	.914	1.073	.004
PS item 2	.945	.884	1.000	.005
PS item 1	1.000	1.000	1.000	–
RG item 3	1.003	.942	1.063	.005
RG item 2	1.032	.973	1.089	.005
RG item 1	1.000	1.000	1.000	–

Note: PAD = Professional abilities development; CGP = Career goal progress; PS = Promotion speed; RG = Remuneration growth.

**Table 6.** Means, standard deviations, inter-correlation and reliabilities (in diagonal) of the four OCG factors for the Chinese sample.

Factors	<i>M</i>	<i>SD</i>	1	2	3	4
1. Career goals progress	3.63	.79	<i>.93</i>			
2. Professional abilities development	4.22	.66	.63	<i>.94</i>		
3. Promotion speed	2.90	.94	.62	.43	<i>.93</i>	
4. Remuneration growth	1.98	.99	.39	.26	.55	<i>.96</i>

Note: *n* = 296; Coefficient alpha internal consistency reliabilities are reported on the diagonal in italic.

Finally, the four-factor model was also assessed in the Italian sub-sample B (Model 7). Results reported satisfactory fit (CFI = .954; NFI = .935; RMSEA = .087).

Subsequently, configural invariance was tested through MGCFA including the Italian sub-sample B and the Chinese sample (Model 8). Results presented in Table 1 reported an adequate fit of Model 8. All the fit indices were satisfactory (CFI = .952; NFI = .933; RMSEA = .065), indicating that the model held on the two samples and, thus, configural invariance was established. Afterwards, metric and scalar invariance were assessed. Thus, in order to test full metric invariance, the free-to-vary model (Model 8) was compared to the constraint model where all the factor loadings were fixed (Model 9). Although the Chi square difference test was statistically significant ( $\alpha = .01$ ) suggesting to reject the full metric invariance, Table 1 shows that all the other fit indexes were comparable indicating that the two models were very similar.<sup>1</sup> Moreover, according to Chen (2007) and Cheung and Rensvold (2002) the difference of the CFI and RMSEA between the two models falls in the threshold for accepting full metric invariance ( $\Delta$ CFI = .006;  $\Delta$ RMSEA = 0). Full scalar invariance was assessed through the comparison of the Model 9 and the constraint model Model 10, where the factor loadings were fixed as well as the intercepts. Results presented in Table 1 indicate that the difference in the RMSEA between the two models falls in the threshold for accepting full scalar invariance, whereas, although very close to the threshold of acceptance,

the difference of the CFI falls in the threshold for rejecting full scalar invariance ( $\Delta\text{CFI} = .013$ ;  $\Delta\text{RMSEA} = .004$ ). However, partial scalar invariance (Model 11) could still be established by relaxing constraints on the intercepts one by one (Byrne, Shavelson, & Muthén, 1989; Dimitrov, 2010; Millsap & Meredith, 2007). According to Dimitrov (2010) modification indexes were inspected to detect the intercepts to be relaxed. Thus, the intercept related to the item. *In this organization, the possibility of my current salary being increased is very large* included in the remuneration growth sub-dimension was relaxed.

According to Dimitrov (2010) up to 20% of the intercepts to be relaxed may be a good compromise to obtain partial scalar invariance. Results presented in Table 1 show that partial scalar invariance could be established ( $\Delta\text{CFI} = .01$ ;  $\Delta\text{RMSEA} = .003$ ). Thus, in sum, measurement invariance of the OCG scale was achieved and thus, cross-cultural equivalence of the OCS scale was supported.

### Latent means examination

After measurement invariance was established, estimation of latent variable means could be conducted. According to Byrne (2001) and Dimitrov (2006) to investigate latent means of the four latent dimensions of the OCG scale the latent means of just one of the group included in the analysis should be fixed to zero. Thus, the latent means of the Italian sub-sample B were fixed to zero and the latent means of the Chinese sample were estimated. Results presented in Table 7 indicate that the Chinese sample showed significantly higher scores for three of the four factors, the exception being for remuneration growth. Results presented in Table 1 show that the model examining latent means fit the data very well ( $X^2=585.447$ ,  $df = 178$ ;  $\text{CFI} = .949$ ;  $\text{NFI} = .929$ ;  $\text{RMSEA} = .065$ ). Thus, according to Byrne (2001) and Dimitrov (2006) the estimates associated with the current partially supported H1.

### Discussion

Results of the current study pointed out that the four-factor model prevailed over the three-factor and unidimensional models both in the Italian and in the Chinese samples. Moreover evidence of cross-cultural equivalence through strong measurement invariance procedure (Byrne, 2001; Dimitrov, 2006; Milfont & Fischer, 2010) was found, indicating stability of the four-factor model in the two countries. This result is consistent with the original four-factor model of Weng et al.

**Table 7.** Latent means comparison.

	Estimate	S.E.	C.R.	P
Professional abilities development	.652	.080	7.00	***
Promotion speed	.257	.873	3.32	***
Remuneration growth	-.036	.086	-1.74	.675
Career goals progress	.465	.087	5.331	***

Note: Estimates are related to Chinese sample.

\*\*\* =  $< .001$

(2010) where, similarly to the current study, the sample comprised employees from different organizations and different work roles. On the contrary, the sample used by Weng and McElroy (2012), which reported a better fit of the three-factor model, included just managers. Thus, it is likely that the four-factor structure might perform well in heterogeneous samples, while the three-factor structure might better work in the manager samples (see Weng & McElroy, 2012), although further research, particularly that dealing with managerial samples is needed. Also, it is possible that the three-factor structure might work better also for other homogeneous clusters of employees.

Moreover, reliability coefficients in the Italian sample were even better than those of Weng et al. (2010), which were .85, .86, .80 and .78, respectively, indicating good internal consistency of the items on each of the four sub-scales.

Finally, latent variables means were estimated indicating that the scores of the Chinese sample were higher than those of the Italian sample for all the latent constructs, except remuneration growth. Thus, according to H1, Chinese employees perceive higher levels of career growth than Italian workers do, possibly as a result of China's economic prowess, cultural differences or due to some unknown factors. In this context, it has to be noted that economic, cultural, conceptual and methodological issues regarding the adaptation of the OCG scale in Italy could have accounted for these results. An additional explanation for the differences might reside in the heterogeneity/homogeneity compositions of the two samples. In fact, the Italian sample represented a stratified sample of Italian workers, whereas the Chinese sample represented a homogeneous sample of University employees. This explanation is supported by Briscoe's et al. (2012) argument that the specific work context for their Chinese sample might have impacted on the workers' career growth perceptions. Finally, according to Hofstede (2010), broader cultural differences may account for these differences. Thus, for all these reasons the examination of the four OCG latent mean values in the Italian and Chinese sample should be interpreted cautiously.

### ***Limitations and suggestions for future research***

While this is the first study testing the Italian version of the OCG scale and examining the cross-cultural differences across Italian and Chinese samples, some limitations should be taken into account. First, the examination of other forms of validity (such as convergent, discriminant and criterion-related) is necessary to establish the OCG scale for use in Italy. Longitudinal research is needed to investigate the relationships between OCG and the outcomes of work experiences, such as job satisfaction and organizational commitment. Second, the Chinese sample used in this study is a homogenous sample of University employees, whereas the Italian sample could constitute a representative stratified sample of the Italian working population. Future studies should try to obtain more comparable samples, which could be used for cross-cultural evaluations of the OCG scale. Third, all

the information was gathered by questionnaires, raising the potential problems of common method variance bias. According to Podsakoff, MacKenzie, Lee, and Podsakoff (2003), in order to reduce potential risks of common method variance, the anonymity of the survey should be guaranteed and participants should be instructed that there are no right or wrong answers in the questionnaire items. We followed both of these suggestions. Fourth, the relative moderate departure from multivariate normality may have impacted the results. Although the bootstrap method and large sample sizes helped obtain less compromised results, the analysis of the smallest sample, in particular, might have been impacted from moderate non-normality.

Future studies in Italy, as well as in other countries, should test the dimensionality of the OCG scale in samples of managers to verify the hypothesis that the three-factor structure may work better with samples of managers. Overall, it is recommended that researchers in this field always examine the dimensionality of the OCG scale to find the best structure of the OCS scale for their studies.

Finally, research looking at career growth in other economically prosperous countries vs. workers in countries with struggling economies would help establish the role of economics as a determinant of perceptions of career growth. Moreover, research on career growth across cultures high or low in particular cultural values would help establish the role of culture in career growth.

### ***Practical implications***

Findings of the current study suggest that the use of the Italian version of the OCG for research and practical purposes in Italy is warranted. Although recent transformations in the modern world of work occurred in the Western economies have involved hindering career advancement interventions, such as downsizing, flattening organizational structure, wage freezes and job enrichment, career growth interventions may still play a strategic role. For instance, managers of organizations, where, for example, layoff and restructuring have been adopted, may use career growth intervention as a possible way to re-establish positive employee attitudes toward the organization in terms of job satisfaction (Weng et al., 2010). Moreover, career growth possibilities may also foster motivation to work and increase the employees' performance (Spagnoli, in 2007). Given this, the major practical implication of our study is that practitioners can use the OCG in Italy (and elsewhere) with the expressed purpose of monitoring employees' perceptions of career growth in a specific organization. Doing so may provide an early warning regarding potential attitudinal and behavioral problems, such as low job satisfaction, low commitment, and high turnover. This is particularly important with respect to knowledge workers with scarce skills and high performing employees who might have higher mobility options. By monitoring their perceptions of career goals, skill acquisition, promotional opportunities, and remuneration growth, a company can put itself in the position to positively influence those

employees toward increased commitment to the organization and subsequently retain their services.

## Conclusion

Results of the current study further support the validity of the original four-factor OCG scale both in China and Italy. Cross-cultural equivalence procedure, including measurement invariance, further supported the original four-factor structure of the OCG scale simultaneously in Italy and China. Moreover, evidence of higher scores of the Chinese sample for all the OCG sub-dimensions, except remuneration growth, was found.

## Note

1. It has to be noted that some authors do not recommend the use of the Chi square difference test, since it is sensitive to sample size (e.g. Bentler & Bonnet, 1980; Chen, 2007; Cheung & Rensvold, 2002). In our study all the Chi square difference tests conducted suggest rejecting the measurement invariance. While we reported the results of the Chi Square differences, according to Chen (2007) and Cheung and Rensvold (2002) we put greater emphasis on the CFI and RMSEA indices than on the Chi Square differences.

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