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ORIGINAL AND APPLIED RESEARCH

Individual potential and its relationship with past and future performance

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ABSTRACT

The need for companies to compete globally for the available talent results in the individuals' need to develop and compete themselves in the global job market. Thus, an individual's potential represents the degree to which characteristics of employees may result in enhanced future development of a professional. By means of a longitudinal research, the authors study the effect of previous individual performance on potential and the impact of potential on future performance. A short theoretical-based measure of potential has been developed resulting in four different subdimensions of individual potential.

KEYWORDS

High potential; longitudinal studies; performance; talent management; undergraduate/early adults

The increasing interfirm competition to attract talent (Stahl et al., 2007) with a more pressing set of skills (Guthridge & Komm, 2008) has called for standardized talent management practices, including succession planning and high potential programs (McDonnell, Lamare, Gunnigle, & Lavelle, 2010). As a result of global talent shortages, firms experience difficulties to meet their client needs, reduced productivity, increased employee turnover, reduced innovation and creativity, lower employee engagement, and higher compensation costs (Manpower Group, 2014). From the employee perspective, this also means that individuals must develop to their full potential to compete in the job market. The challenges of such competition include but are not limited to the use of a second language, in many cases English as lingua franca (Kankaanranta & Planken, 2010), and interacting with different cultures (Frey-Ridgway, 1997). On this context, identifying and developing high-potential individuals becomes key to addressing such shortages.

High-potential individuals and high performers appear as small groups of individuals, who show above-average contributions to its success (Axelrod, Handfield-Jones, & Michaels, 2002). In particular, high-potential individuals display the ability to become more than what they are (Silzer & Church, 2009) at a faster pace than their peers (Gallardo-Gallardo, Nijs, Dries, & Gallo, 2015). Their skills are highly unique and difficult to replace allowing them to advance in the organization (Malik & Singh, 2014). Yet, only up to 20% of a company's employees are considered to be high-potential individuals (Swailes, 2013).

Most often, organizations rely on their unique performance reviews to measure potential using organization-specific measures that are strongly biased by past performance, contradicting the definition of potential as the individuals' ability to become more than what they are (Silzer & Church, 2009). Thus, the contribution of this study is twofold. First, it adds to the talent management field by developing a reliable and valid measure for the identification of high potential individuals (Gallardo-Gallardo, Dries, & Gonzalez-Cruz, 2013). Using a longitudinal design, our study also responds to the need of following the evolution of potential over time (Dries, 2013; McDonnell, Hickey, & Gunnigle, 2011). Second, it sheds light on the factors influencing an individual's future performance, which in turns allows to improve the education of business professionals by means of understanding the relationship between potential and performance. This way, business programs may implement strategies to boost students to develop to their full potential.

Literature review

Identification of high-potential individuals

Articulating the anatomy of high-potential individuals seems to be a difficult task to comply with (Ready, Conger, Hill, & Stecker, 2010) for several reasons: the

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use of organization-specific measurement instruments (Silzer & Church, 2009), the use of past performance ratings as the sole measure of potential (McDonnell & Collings, 2011), and the manager's tendency to base the evaluation of potential on his or her own profile, leading to the identification of a "clone" (Makela, Bjorkman, & Ehrnrooth, 2010).

Several surveys have been conducted to identify firm's approaches to high potential identification to find that a large percentage of the surveyed organizations have some kind of identification process in place (Corporate Leadership Council, 2005; Ready, Conger, Hill, & Stecker 2010; Silzer & Church, 2009). As a result, it has been found that most firms rely on the opinion of senior executives (40.5%), performance appraisals (42.9%), formal talent reviews (31.1%), or perception and judgement of the immediate manager 38.1% (Hagemann, Matone, & Maketa, 2014). Most forms of assessment rely on either in-house procedures, which may lack validity and reliability, or proprietary assessment instruments. In our view, the assessment of potential can rely on a theoretical definition leaving aside organizational specific aspects and differentiating potential from past performance.

The conceptualization of Ready, Conger, Hill, and Stecker (2010), provides a good starting point. Based on research of 45 companies, these authors identified three baseline traits of high-potential individuals, namely to deliver strong results while building trust, master technical and managerial expertise that is accompanied by skills, and show exemplary behavior becoming role models in the organization. These traits were used as the basis to define four factors, which constitute the value-added portion that leads to the high-potential concept, namely a drive to excel, a catalytic learning capability, an enterprising spirit, and dynamic sensors. The first factor, a drive to excel, refers to the way high-potential individuals are driven to succeed, how they are willing to go the extra mile and make sacrifices to advance professionally (Ready, Conger, & Hill, 2010). The second factor, a catalytic learning capability, relates to a capacity to scan for new ideas, the cognitive capability to absorb them, and the common sense to translate that new learning into productive action for their customers and their organizations (Ready, Conger, & Hill, 2010). The third factor, an enterprising spirit, can be defined as a constant search for new paths or activities, and the willingness to leave one's comfort zone to pursue opportunities that lead to growth and development (Ready, Conger, & Hill, 2010). The fourth factor, dynamic sensors, refers to a well-tuned radar to value high-quality results and avoid derailment. It is the ability to quickly read situations and enact timely actions, and knowing when to pursue something and when to pull back, so they are at the right place at the right time (Ready, Conger, & Hill, 2010).

Potential and performance

Conceptually, potential refers to the ability to deliver superior performance in the future. But, several surveys have found performance to be among the most commonly used factors to assess an individual's potential (Corporate Leadership Council, 2005; Ready, Conger, Hill, & Stecker 2010; Silzer & Church, 2009), some even rely exclusively on it. Past and current performance are considered to be a necessary but not sufficient condition for the existence of high potential (Silzer & Church, 2009).

Nowadays, many firms devote considerable amounts of time and resources to high-potential individuals with the aim of developing them for long-term future performance (Silzer & Church, 2009). Nevertheless, there is lack of empirical studies on the relationship between potential and future performance (McDonnell, 2011) as most of the literature, not only for the specific case of potential but for the general field of talent management, is of conceptual nature (Thunnissen, Boselie, & Fruytier, 2013), or based on anecdotal and practitioner-based evidence (Gallardo-Gallardo et al., 2013). Thus, the present study aims at making a contribution to the field in which empirical studies are needed (Collings & Mellahi, 2009; Thunnissen et al., 2013).

The present study

When it comes to the operationalization of high potential and how it actually develops, the lack of empirical research (McDonnell, 2011) constitutes an interesting gap in the literature. Previous studies have addressed potential, mostly from the perspective of the effects of organizational practices, including those of Gelens, Hofmans, Dries, and Pepermans (2014), Malik, Singh, and Chan (2017), and McDonnell, Hickey, and Gunnigle (2011). The goals of the present study are twofold: on the one hand, we aim at developing a short theoretically driven measure of potential allowing to identify levels of potential in different business-related careers. On the other hand, adopting a longitudinal design allows to validate the theoretical causal links between previous performance and potential (Hypothesis 1), and between the latter and task

and general performance (Hypotheses 2a and 2b). To our knowledge, there are no longitudinal studies validating short measures of potential and the theoretical links of potential with past and future performance. Structural equation modeling (SEM) was used to analyze the data. After testing for content validity, two exploratory structural equation models (ESEM) models allowed validating the psychometric properties of the model. A one-factor and a four-factor ESEM models were compared using traditional model fit cutoff values. The four-factor ESEM was validated following the theoretical model according to which potential is composed by four dimensions. Originally, the items were developed to measure one out of these four potential dimensions. Experts suggest considering competing models when validating SEM models (Kline, 2011). Thus, a one-factor ESEM was tested following the plausible assumption that all the items we developed measured 1 general potential factor. Two further ESEM multiple indicators and multiple causes (MIMIC) models were tested independently to validate the causal links between previous performance and potential (MIMIC model 1), and among potential and general and task performance (MIMIC model 2). These models were tested separately because we did not find any theoretical assertion proposing potential as mediator of the relationship between previous and future performance. It is noteworthy that the MIMIC models allow testing the hypothesis of the study including the potential factors as latent variables. This is an advantage with regard to traditional analysis of variances were latent variables such as potential are reduced to observed variables (Kline, 2011).

Method

Participants and procedures

The sample used to test the proposed hypotheses was composed by students ($N = 281$) in a Colombian university enrolled in different programs (international business [63%], marketing [28.8%], business administration [6.8%], and economics and other programs [1.4%]). As part of a capstone course on international strategy, students took part on a multicountry collaboration project. Through the project students are placed in international and multicultural teams to work together to developed an international business plan for one of the project's international partners (X-Culture, 2017). This way, the project challenges the students with a realistic experience of working in international business, as it emulates closely a global corporate environment (Alon, Boulanger, Meyers, & Taras, 2016). It involves the use of a second language, multicultural and international teams, virtual work and collaboration, and technical knowledge relating to their careers to be able to develop business solutions for international challenges. The mean age of the participants was 22.57 years ($SD = 1.88$ years), with 39.15% men and 60.85% women.

Measures

Demographic data

The questionnaire solicited information relating to the participant's age, gender, and academic program.

Potential

To develop a short scale for the identification and assessment of potential, a thorough review of the literature on the field was conducted. This allowed to establish an operational definition of the construct of potential following a deductive approach to generate the items (Hinkin, Tracey, & Enz, 1997). Based on the definition proposed by Ready, Conger and Hill (2010), potential was hypothesized to be composed of four dimensions: drive to excel, catalytic learning, enterprising spirit, and dynamic sensors. An initial pool of 20 items was created, including five statements for each factor and using a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Past performance

The student's grade point average (GPA) was used to measure his or her cumulative performance previous to the assessment of potential. Previous GPA is calculated by dividing the total grade points earned by the student by the number or cumulated credits, in the semester immediately previous to the present study.

Future performance

Two measures of future performance were used: task performance of the participants on an experiential learning assignment and, the students' GPA, as general performance.

Task performance. The first measure was collected through an experiential learning assignment, the X-Culture Project, consisting on students being assembled into multicultural virtual teams to develop an international business plan for a real-life challenge of one of the project's corporate partners (X-Culture, 2017). Performance of the individual participants was rated by 4–6 peers based on his or her

communication skills, exhibited level of effort, quality of ideas, leadership, and friendliness.

General performance. The student's GPA at the end of the academic semester was used to measure the participant's subsequent cumulative performance.

Control variables

Age, gender, and the academic program of the participants were used as control variables.

Importantly, common method bias was prevented by using different raters and performance measures. Further on, lecturers assessing potential were unaware of the students' previous performance (GPA) avoiding potential confirmation bias.

Findings

The normality of the item scores was tested by observing the absolute value of skewness and kurtosis of the distributions. These values were calculated using the following formulas: $Z_{Skewness}$ = Skewness/$SE_{Skewness}$ and $Z_{Kurtosis}$ = Skewness/$SE_{Kurtosis}$. Values greater than 2.58 or less than −2.58 help to establish normality for the corresponding distributions. The $Z_{Kurtosis}$ values of all items were above/below the rule of thumb, whereas $Z_{Kurtosis}$ scores of several items indicated nonnormality of the data. Consequently, all ESEM models were tested using the maximum likelihood estimator with standard errors and a mean-adjusted chi-square test statistic that are robust to nonnormality. CF-varimax oblique rotation was selected having into account that all the four scales of the potential instrument represent subdimensions of a general potential factor. The goodness of fit of all ESEM models were evaluated using the cutoff values proposed by Hu and Bentler (1999). To this end, the following coefficients and critical values were considered to conclude good fit of the ESEM models to the data: nonsignificant chi-square value, confirmatory factor index close to .95, root mean square error of approximation close to .06, and standardized root mean square residual close to .08.

The hypothesized four-factor model obtained excellent goodness-of-fit scores, indicating that the model has a good fit to the data, $\chi^2(24, N = 281) = 29.15$, $p = .21$. Although theoretically plausible, the competing one-factor model showed poor goodness-of-fit results, $\chi^2(54, N = 281) = 602.02$, $p = .00$. Thus, the four-factor ESEM was selected over the competing model. The critical value for factor loadings recommended when samples are of about below 300 participants is .35 (Hair, Black, Babin, & Anderson, 2009) five out of the original 20 items were deleted. These items were eliminated for one of the following reasons: their factor loadings did not arrived to the critical value or showed cross-loadings over it. Retained items are shown in Table 1. Item hp4 obtained a residual variance near the expected alpha level ($p = .08$). The item was maintained having into account its high and significant factor loading. More importantly, since its residual variance was not negative, maintaining the item hp4 did not imply model identification or convergence problems.

Table 1. Four-factor ESEM factor loadings ($N = 281$).

Item	DE	CL	ES	DS	Residual Variance
hp3	**.76****	.11**	−.01	.16**	.10
hp4	**.81****	.10**	.11**	.03	.04
hp5	**.61****	.00	.26**	.18**	.10
hp7	.17**	**.75****	.13**	.00	.09
hp8	.05*	**.86****	.05*	.08*	.05
hp9	.04**	**.86****	.04	.11**	.04
hp11	.05	.11**	**.66****	.24**	.08
hp12	.13**	.10**	**.79****	.03	.08
hp14	.06*	.04	**.71****	.24**	.04
hp17	.10**	.08**	.23**	**.66****	.06
hp18	.07*	.08**	.14*	**.77****	.05
hp19	.34**	.13**	−.05	**.50****	.31

Note. Estimator: maximum likelihood; rotation = CF-varimax. CL = Catalytic Learning Capability; DE = Drive to Excel; DS = Dynamic Sensors; ES = Enterprising Spirit.
*$p < .05$; **$p < .01$.

The variances of the factors are fixed at 1 as a default setting in ESEM models. Correlations between factors were all below .85 suggesting discriminant validity for all the scales (Kenny, 2016). Discriminant validity for the scales is supported by the fact that the one factor ESEM showed poor fit.

To assess the reliability of the four potential scales, we calculated the omega coefficient. The critical value of omega is .8 (Raykov & Marcoulides, 2011). Unlike Cronbach's alpha, omega is not sensitive to the number of items of the scales. The four potential scales showed excellent reliability, with values ranging from .94 to.98. Once we validated the four-factor measure of potential, we proceeded to test the MIMIC models. MIMIC models 1 and 2 showed excellent fit to the data.

MIMIC model 1, as presented in Figure 1, results totally support Hypothesis 1, $\chi^2(32, N = 260) = 41.34$, $p = .13$. Previous GPA exerted a positive and statistically significant effect of all potential dimensions. We created a series of dummy variables to control for gender, age, and program. The effects of previous GPA on each one of the potential dimensions were still significant after controlling for age, gender, and undergraduate program.

MIMIC model 2 partially supported Hypothesis 2 (see Figure 2), $\chi^2(40, N = 260) = 50.67$, $p = .12$. Our

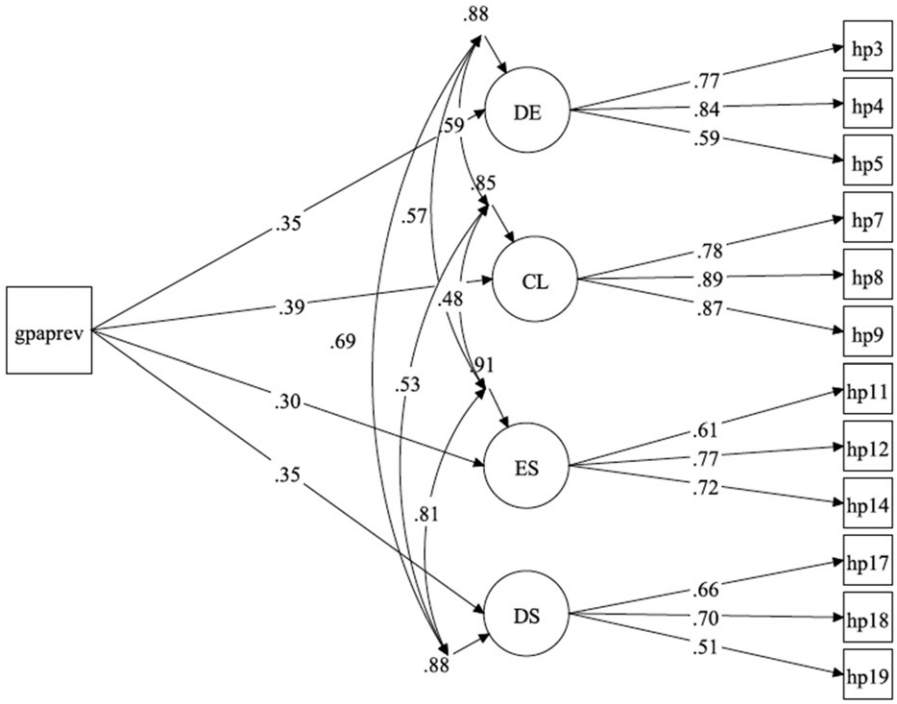

Figure 1. MIMIC model 1: $n = 260$; maximum likelihood estimator; CF-varimax oblique rotation; Standardized coefficients significant at the $p < .01$ level. Cross-loadings below the critical value of .35 were omitted in the figure for the sake of parsimony.

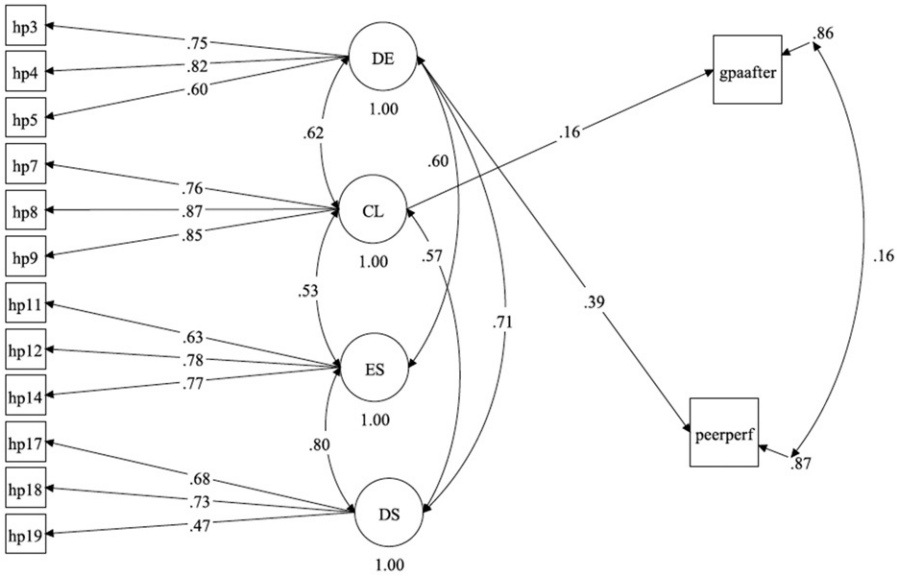

Figure 2. MIMIC model 2: $n = 271$; maximum likelihood estimator; CF-varimax oblique rotation; Standardized coefficients significant at the $p < .01$ level except for the estimate from CL to GPAPOST, significant at the $p < .05$ level. Cross-loadings below the critical value of .35 were omitted in the figure for the sake of parsimony.

results indicate that drive to excel exerted a positive and significant influence on task performance, whereas catalytic learning capability has a statistically significant effect on GPA as measured after the course. We also found that task performance was positively correlated to general performance. After controlling for gender, age, and undergraduate program, the effects of considered in the MIMIC model 2 were still significant.

Conclusions

The present longitudinal research was aimed at developing a potential measure and studying its

relationship with previous and future performance. Our results contribute to the talent management field in different ways. First, in face of prevalent cross-sectional studies, in the present article we present a longitudinal study to validate the potential construct and its relationships with individual performance. Second, this study is concerned with the individual differences that determine potential and their ability to predict future performance, as opposed to most previous studies that focus on the effects of organizational practices relating to talent management and high-potential programs on employees' attitudes and behaviors. Third, we report the results of the development of a short potential scale and the validation of the theoretical links between previous performance (Hypothesis 1) and post hoc task and general performance (Hypotheses 2a and 2b). The findings suggest that the scale possess good psychometric properties, allowing the evaluation of the interdependent and intercorrelated four theoretical potential dimensions. The scale assesses potential in business students, independently of the undergraduate program. Our findings suggest that potential is independent from and depends on previous performance (GPA), confirming the postulates of other authors who suggested that past performance is a necessary but not sufficient condition for the existence of high potential (Silzer & Church, 2009). Furthermore, our results indicate that potential partially predicts task performance (reported by peers) and general performance (GPA).

Our study is particularly useful for staffing professionals and researchers. As our measure of potential seems to be consistent when compared with accumulated previous and post hoc performance, it can help talent management practices by anticipating the performance of unexperienced hires. Previous research has reported preferences for experienced hires over new graduates (Rynes, Orlitzky, & Bretz, 1997). However, while more skilled and experienced workers walk into retirement, there are smaller numbers of young graduates ready to join the workforce in many countries (Burke & Ng, 2006). Studying potential in young graduates can play a positive role in allowing firms to identify young talent to be developed and retained. Especially considering that the literature relating to potential identification suggests that "at any career stage, it makes sense to build an identification process that proceeds through these three steps" (Silzer & Church, 2009, p. 404), thus making room for the study of potential using a student sample.

From the perspective of educational programs and business faculty, the present study provides evidence on the relationship between potential and performance, which may serve as a guide for curriculum design and the implementation of alternative teaching methodologies. Also, it is interesting to note how the use of experiential learning activities allow testing the performance of students in realistic business settings. Especially, considering that, as previous studies indicate, their exposure to the challenges inherent to international virtual teams are related to enhanced cultural intelligence (Robledo-Ardila, Aguilar-Barrientos, & Román-Calderón, 2016). Thus, it would be interesting to conduct further studies to analyze the relationship, not only between potential and performance, but other variables that may mediate or moderate such relationship, such as the involvement in different types of activities, including as international projects.

The individuals' past performance, as measured by previous GPA, has been found to predict all four factors of high potential and to carry discriminant validity with the measure of potential. This way, student's previous GPA is indicative of a student's drive to excel, catalytic learning capability, enterprising spirit, and dynamic sensors. Past performance was found to be indicative of potential, yet past performance does not equate to actual potential to achieve future development. This supports the postulates of McDonnell and Collings (2011), who stated that the use of past performance as a measure of future talent creates problems as they are not the same.

Regarding potential as a predictor of performance each factor was analyzed and, Hypotheses 2a and 2b were partially supported. The first factor, drive to excel, was found to be a predictor of task performance as measured by the individual's peers. As a result, it is possible to say that an individual's willingness to go the extra mile is indicative of his or her future performance. As for general performance, this factor was not found to predict the student's general performance as measured by his or her GPA. The second factor, a catalytic learning capability, was found to be a predictor of general performance. This means that the individual's capacity to seek new ways, scan for new ideas, and use them for productive action is indicative of future general performance, which in this case was operationalized as cumulative GPA. Nevertheless, this factor was not found to predict task performance. The third and fourth factors, an enterprising spirit and dynamic sensors, were not found to be predictors of task or general performance. This findings shed light

on the fact that educational programs may focus on career-motivation aspects and learning competences as drivers for an individual's future performance when joining the workforce.

Limitations and avenues for future studies

The difficulty of gathering data from different raters and at different points in time in the business world led us to consider a student sample for this research. The use of student samples is appropriate under specific conditions (Peterson & Merunka, 2014). Such as the case of this study, which deals with a theoretical explanation (Mook, 1983), and is concerned with a characteristic linked to human nature that is well-defined theoretically (Bello, Leung, Radebaugh, & von Witteloostuijn, 2009). Nevertheless, the nature of the sample should be acknowledged when discussing the findings of this study. We believe that to further our results, samples composed by professionals should be considered by future researchers.

Future researchers should also consider testing concurrent validity of this scale. Additionally, the scale could be validated using a sample of business and other type of professionals. The availability of other scales and data reported for different raters regarding professional potential and performance constitute the bigger challenges in this sense.

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