Utility analysis of character assessment in employee placement

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Utility analysis of character assessment in employee placement

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Abstract

Purpose – There has been a surge of interest in leader character and a push to bring character into mainstream management theory and practice. Research has shown that CEOs and board members have many questions about the construct of leader character. For example, they like to see hard data indicating to what extent character contributes to organizational performance. Human resource management professionals are often confronted with the need to discuss and demonstrate the value of training and development initiatives. The question as to whether such interventions have a dollars-and-cents return on the investment is an important one to consider for any organizational decision-maker, especially given the demand for increased accountability, the push for transparency and tightening budgets in organizations. The authors investigated the potential dollar impact associated with the placement of managers based on the assessment of leader character, and they used utility analysis to estimate the dollar value associated with the use of one instrument – the Leader Character Insight Assessment or LCIA – to measure leader character.
Design/methodology/approach – The authors used field data collected for purposes of succession planning in a large Canadian manufacturing organization. The focus was on identifying senior management candidates suitable for placement into the most senior levels of leadership in the organization. Peers completed the LCIA to obtain leader character ratings of the candidates. The LCIA is a behaviorally based and validated instrument to assess leader character. Performance assessments of the candidates were obtained through supervisor ratings.
Findings – The correlation between the leader character measure provided by peers and performance assessed by the supervisor was 0.30 ($p < 0.01$). Using the data required to calculate ΔU from the Brogden-Cronbach-Gleser model leads to an estimate of CAD $564,128 for the use of the LCIA over the expected tenure of 15 years, which is equivalent to CAD $37,609 yearly; and CAD $375,285 over an expected tenure of 10 years, which is equivalent to CAD $37,529 yearly. The results of the study also indicate that there is still a positive and sizeable return on investment or ROI associated with the LCIA in employee placement even with highly conservative adjustments to the basic utility analysis formula.
Originality/value – Utility analysis is a quantitative and robust method of evaluating human resource programs. The authors provide an illustration of the potential utility of the LCIA in a selection process for senior managers. They assert that selecting and promoting managers on leader character and developing their character-based leadership will not only leverage their own contributions to the organization but also contribute to a trickle-down effect on employees below them.
Keywords Leadership, Character, Utility analysis, Leader character insight assessment
Paper type Research paper

Introduction

Hannah and Avolio (2011) stated that "character is an indispensable component of sustainable leadership performance" (p. 979). Liborius (2017) found that character – specifically, integrity and humility – incrementally predicted the leader's worthiness of being followed above and beyond the impact of transformational leadership. Yet, according to Hannah and Avolio (2011), "most current leadership theories such as leader member

exchange or ethical leadership do not include an in-depth discussion of character or other locus that drives such leadership" (p. 980). Scholars have urged leadership researchers to address this void and pursue an agenda that helps us to develop a deeper understanding of character in business leadership (e.g. Cohen *et al.*, 2014; Wright and Quick, 2011).

A surge of interest in leader character in the public, private and not-for-profit sectors has created an additional push to bring character into mainstream management theory and practice. We suspect that the recent interest in leader character is, to some degree, the result of highly visible leadership fiascos. For example, the business world continues to be mired in scandal, from the role of bank executives in the global financial crisis, to Volkswagen's diesel emissions scandal, to the fraud at Theranos, to Wells Fargo's unauthorized account openings, and to cultures of harassment in many organizations. These examples all involve leaders with character deficiencies that induce, influence or propel poor judgment and / or situations where others have accepted and tolerated such behavior when shown by others (e.g. Crossan *et al.*, 2017; Seijts *et al.*, 2019; Wright, 2011).

The cost of these (and other) transgressions for organizations and related stakeholders has been substantial. For example, in 2016 alone, in two settlements, one with the United States and the State of California and the other with the US Federal Trade Commission, German automaker Volkswagen AG and related entities agreed to spend up to USD $14.7 billion to settle allegations of cheating emissions tests and deceiving customers (Good Jobs First, 2016). It is no surprise, therefore, that scholars have urged that character be elevated alongside competencies in leadership research and practice (e.g. Hannah and Avolio, 2011; Seijts *et al.*, 2015; Sturm *et al.*, 2017; Wright and Quick, 2011).

Leader character is an ambiguous construct that has challenged researchers (e.g. Crossan *et al.*, 2017; Wright and Goodstein, 2007; Wright and Huang, 2008). For example, researchers have used different definitions and operationalizations of character. Although a detailed discussion of what exactly constitutes leader character is beyond the scope of this article, a comprehensive examination of the literature reveals that many researchers anchor their discussion of character in virtuous character (e.g. Bright *et al.*, 2006; Crossan *et al.*, 2017; Liborius, 2017; Palanski *et al.*, 2015; Riggio *et al.*, 2010; Peterson and Seligman, 2004; Wang and Hackett, 2016; Wright *et al.*, 2017). For example, Crossan and her colleagues (2017) describe character as a set of interconnected virtues that are manifested "in habits of cognition, emotion and behavior that embody human excellence and produce social betterment" (p. 2). They conceptualize leader character as an amalgam of virtues, values and personality traits that enable sustained excellence through habits and / or behaviors.

Virtues are contextually appropriate behaviors (e.g. humanity and temperance) that are widely considered as emblematic of good leadership. For example, demonstrating care for others and actively promoting their well-being are behaviors associated with the virtue of humanity and contribute to both personal and professional development. A few of the virtuous behaviors reflect personality traits, such as conscientiousness and openness to experience, which are relatively stable dispositional variables. These personality traits predispose individuals to behave in certain virtuous ways, if not overridden by contextual variables such as incentive systems or peer pressure. For example, behaviors that help to withstand difficult situations and to bounce back from hardship reflect the personality trait of resiliency, which enables individuals to develop mechanisms for protection against experiences that could be overwhelming, if not debilitating. Lastly, a few of the virtuous behaviors express values, such as transparency and acting with candor in interpersonal interactions. Values are an acquired set of deeply held beliefs about what is morally right or wrong and, like personality traits, remain relatively stable across contexts and situations (e.g. Russell, 2001; Schwartz and Bilsky, 1987). For example, leaders who provide timely and candid feedback to their employees tend to develop higher levels of trust which facilitates

engagement and sustained excellence. Character, in short, is a habit of being – a set of observable behaviors – anchored in a set of virtues, personality traits and values.

Crossan, Gandz, Seijts and their colleagues initiated a comprehensive research program to examine character in organizational and managerial contexts (e.g. Crossan *et al.*, 2016, 2017; Seijts *et al.*, 2015, 2019) and, in doing so, they extended the seminal work of Peterson and Seligman (2004) on virtues and character strengths to organizational settings. Both qualitative and quantitative studies involving over 2,500 leaders from the public, private and not-for-profit sectors led to the identification of 11 character dimensions and 61 character elements (see Figure 1). Crossan *et al.* (2017) use the term character dimension to refer to the higher-order construct (e.g. temperance, humanity and courage) and character elements to refer to the virtuous behavioral indicators (e.g. composed, compassionate and tenacious) that illustrate and support the dimensions.

Further, as can be seen from Figure 1, the researchers view character as a network of closely intertwined character dimensions that support each other. This intertwined aspect is an important property of the framework since what might appear to be inherently a virtue may, in fact, operate as a vice when not connected to other leader character dimensions. For
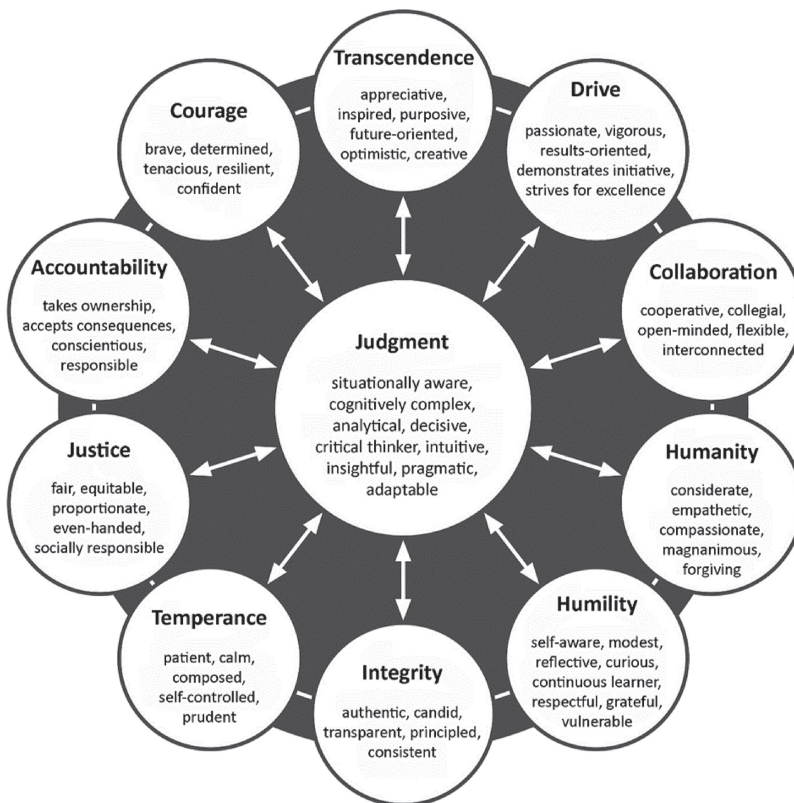
Note(s): Leader character framework reflecting character dimensions and associated elements. Framework adapted from Crossan *et al.* (2017)

Figure 1.
Leader character
dimensions and
associated elements

example, an excess of confidence and determination may be interpreted as insensitivity or arrogance in the absence of empathy and compassion.

The research that Crossan, Gandz, Seijts and others conducted led to the development of a character diagnostic — the Leader Character Insight Assessment (LCIA; Crossan *et al.*, 2014) — structured in both self-administered and 360-degree formats. The LCIA consists of 60-plus behavioral statements used to describe the character elements. Latham and Wexley (1994) explained that behavioral statements are the preferred method of performance assessment for at least two reasons. First, behavioral statements measure what people actually do on the job, and hence they are less susceptible to biases outside the control of the person being evaluated. Second, behavioral statements typically show higher inter-rater reliability than pure trait-based measures. However, consistent with the definition of character provided earlier, several of the behavioral statements embed within them cognitive and / or emotional components. For example, the character dimension of humanity invokes empathy and compassion which contain emotional aspects.

The instrument has been used by manufacturing and construction companies, institutions in the financial sector, organizations providing healthcare services, government agencies, academic institutions and other entities. The diagnostic tool provides an assessment of an individual's leader character and is a resource to help them unpack and discuss the dimensions and elements of character.

Although research has shown that character is related to performance measures including, but not limited to, executive performance, innovation, subjective well-being and customer retention, Seijts and his colleagues (2019) reported that CEOs and board members have many questions about the construct of character. Senior executives in the public, private and not-for-profit sectors believe character is essential in individual, team and organizational excellence. However, they like to see data showing to what extent character contributes financially to organizational performance. Put differently, they are concerned about the question as to the utility of selecting leaders based on their level of character: How much exactly does leader character matter? Human resource management professionals are often confronted with the need to discuss and demonstrate the value of their training and development initiatives, including making a compelling case to use organizational resources to select on and develop leader character (e.g. Cascio and Boudreau, 2008; Winkler *et al.*, 2010). Our assumption is that empirical evidence on the relationship between character and financial metrics would reinforce the perceived importance of character and hence makes it easier for human resource professionals and senior executives to justify embedding character in organizational processes.

Studies have shown that human resource management processes and interventions – in recruitment and selection, performance appraisal, training and development, turnover and so forth – can have a substantial economic impact on business organizations (e.g. Cascio, 1999). Our paper relies on the previously established finding that character drives performance to tackle a more practical concern – to investigate the potential financial impact associated with placing managers based on leader character. Specifically, we used utility analysis to estimate the dollar value of employee placement based on the assessment of character using the LCIA.

Utility analysis is a quantitative method of evaluating the net financial benefit resulting from human resource interventions such as selection and training and development (e.g. Cascio, 1999; Holling, 1998; Sturman, 2012). An organization's success depends, to a large extent, on having the right work force. For example, Tziner and Birati (2015) wrote that: "[t]he economic success of a firm is contingent on careful planning, not only in the realms of production and marketing, but also in the selection, maintenance, and training of a highly loyal and skilled work force whose size and performance ratings are compatible with the firm's short- and long-term financial strategies" (p. 1270). Therefore, it is important that organizations appreciate and use quantitative approaches to selecting, developing and motivating their employees.

Utility analysis overview

In the context of employee selection or placement, utility refers to the improvement in the "quality of individuals selected beyond what would have occurred had that device not been used" (Cascio and Aguinis, 2011, p. 333). What exactly constitutes the "improvement in quality" is the chief distinction between the various utility analysis models. Some models designate this improvement as a binary decision on the successfulness of the candidate selected with the device (Taylor and Russell, 1939), whereas others designate it as the average improvement on a criterion or performance metric for the group selected with the device versus a group selected at random (Naylor and Shine, 1965).

The model that is at the core of the utility analysis approach we used in our study – Brogden (1946) and Cronbach and Gleser (1965) – defines utility as the estimated improvement in financial value due to increased performance from candidates selected with a device versus the performance of individuals selected at random. Therefore, in the context of the LCIA, the dollar-value improvement in performance stems from the placement of individuals in a management position using the device.

The Brogden-Cronbach-Gleser model

The Brogden-Cronbach-Gleser model assumes a linear relationship between the scores on the selection device (e.g. the LCIA) and the criterion. Importantly, the criterion must be an operationalization of job performance (e.g. peer or supervisor ratings of performance) to satisfy the assumptions underlying the utility analysis. Both the predictor variable and the criterion must be continuous and are assumed to closely resemble or be identical in distribution forms (e.g. Cascio and Aguinis, 2011; O'Boyle and Aguinis, 2012; Schmidt $et\ al.$, 1979).

With these assumptions, the model uses the correlation between the scores on the selection device and criterion as an index of how an increase in the scores on the selection device corresponds to an increase in the criterion and, subsequently, job performance. Although similar to the Naylor-Shine model (1965), the Brogden-Cronbach-Gleser model includes an estimate of the dollar-value improvement provided by an individual who performs one standard deviation above the average on the criterion (SD_y). The model also includes the cost of using the device and the dollar-value improvement compounded over an employee's tenure. The utility formula can be expressed as follows (see Cascio, 1999):

$$\Delta U = N \times T(r_{xy} \times Z_{xs} \times SD_y) - [N(C \div SR)]$$

where,

ΔU = Marginal utility or the estimated dollar-value savings over tenure as a result of using the selection device in placement

N = Number of candidates placed into a position per year

T = Average tenure in years of employees in a position

r_{xy} = Correlation between the selection device or predictor and the criterion or job performance measure in the employee population

Z_{xs} = Average performance of selected candidates in standardized units

SD_y = Dollar value of a standard deviation in the criterion

C = The cost incurred in acquiring and administering the selection device per candidate

SR = Selection ratio or the number of candidates placed into a position per year, divided by the number of candidates available per instance of placement

Estimating SD_y
The greatest difficulty in calculating utility in terms of dollar value is the estimation of SD_y. SD_y reflects the dollar value to the organization of obtaining applicants whose average performance is one standard deviation higher than other applicants. The estimate of SD_y is an important consideration because it affects confidence in the conclusions regarding the economic impact of selecting an employee based on leader character (see, for example, Becker and Huselid, 1992; Boudreau, 1991).

For positions that include objective markers of performance (e.g. car or mortgage sales), the estimation of SD_y only requires that the criterion data for employees in this position be plotted to determine the dollar value associated with the standard deviation. SD_y is simply the standard deviation of the job performance criterion. However, such objective data are not available for many positions (e.g. leadership roles that oversee idea generation and implementation), and, instead, researchers and practitioners have relied on supervisors to provide judgments of the estimated monetary value provided by employees — based on the quantity and quality of the outputs — who perform at various percentiles to calculate SD_y (e.g. Cascio and Aguinis, 2011; Schmidt *et al.*, 1979). Nonetheless, estimation of SD_y using judgments from supervisors can be time-consuming and expensive. In light of the aforementioned, Schmidt and Hunter (1983) suggested that 40% of the average salary for the position can be used as an estimate of SD_y because most supervisor-based estimates of SD_y fluctuate between 40% and 70% of average salary (see also Becker and Huselid, 1992; Holling, 1998).

Other researchers have found that 40% of the average salary might be a very conservative estimate of SD_y (e.g. Judiesch *et al.*, 1992). Further, Hunter *et al.* (1990) found that these percentage-based estimates fluctuate based on the cognitive complexity required to effectively perform the job, with jobs characterized by the highest levels of cognitive complexity resulting in estimates of SD_y above 70% of the average salary. The 70% estimate may be the most appropriate value to use in our calculations since the jobs we studied were at the senior management level (e.g. directors, vice-presidents and senior vice-presidents).

Concerns with estimates of the basic utility analysis formula
Previous research has found that the results of utility analysis are not always readily accepted by managers and practitioners for deciding whether to implement a new instrument or tool (e.g. Latham and Whyte, 1994; Whyte and Latham, 1997). Several researchers (e.g. Cascio and Boudreau, 2008; Macan and Highhouse, 1994; Sturman, 2012) have argued that this might be due to the tendency for the basic utility analysis formula to provide exceedingly high estimates of returns that might be perceived as unrealistic. However, various adjustments to improve the precision of utility estimates have been developed (see, for example, Sturman, 2000, for a review). Generally, these adjustments consist of modifications to the different components of the basic utility analysis formula. Therefore, in order to present a more comprehensive assessment of the potential returns by implementing a character assessment into placement practices, our analyses include several of these adjustments, resulting in a range of utility estimates. The nature of the adjustments is explained in detail in the Supplemental Analyses section.

Methods
Sample and data
We used data collected for purposes of succession planning in a large Canadian manufacturing organization that operates on an international stage. The third author was asked to help the organization build an infrastructure to identify candidates suitable for placement into the most senior levels of leadership in the organization. The infrastructure should cultivate a pool of candidates for senior leadership positions and facilitate informed as opposed to ad hoc placement decisions. Given the importance of the initiative for the

organization's succession and development planning, there was a 100% response rate. The total number of candidates or targets was 111. The number of males and females was 79 and 32, respectively. No other demographic data were collected from the candidates at the request of the organization.

Peers completed the LCIA to obtain leader character ratings of the candidates. The average number of peer assessments available for each senior manager was 4.22 (SD = 1.67). Peer assessments were used because they are frequently used as a tool to facilitate employee development (e.g. Campion *et al.*, 2015; McCauley and Moxley, 1996; Toegel and Conger, 2003). Performance assessments of the candidates were obtained through supervisor ratings. The average number of performance assessments for each manager was 2.17 (SD = 1.39). Measures were collected at roughly the same time, and hence the research design was concurrent in nature. Although, traditionally, predictive validity studies have been assumed to be superior to concurrent validity studies, Barrett *et al.* (1981) showed that the differences associated with these designs have a minimal impact on the magnitude of the obtained validity coefficients.

N and T are relatively straightforward: they are based on historical data and, of course, determined by organizational needs, turnover and other variables. For example, one placement every two years would be entered as 0.5. N and T were provided by the organization and were set at 1 and 15 years, respectively. However, due to a concern with the potential overestimation of tenure provided to us, analyses were also conducted that included an expected tenure of 10 years.

SR requires an estimate of the average number of candidates for the position and is based on organizational records. This variable too was provided by the organization and was set at 3.

C requires an estimate of the costs associated with administering the LCIA to a single candidate. There is a standard fee associated with administering the LCIA; however, additional costs may include the costs associated with the time expended on obtaining the completed LCIA. The direct costs associated with the peer review of the senior manager were set at CAD \$800 given the average of four raters. The average annual pay for the position is based on organizational records and is necessary to calculate SD_y. The average starting salary for the position was CAD \$165,000.

Z_{xs} is the average performance of selected candidates in standardized units. The estimate of Z_{xs} was taken from Naylor and Shine's (1965) tables to calculate Z_{xs} using the selection ratio of 0.33 given to us by the company.

Measures
Leader character. We used the LCIA developed and validated by Crossan and her colleagues (e.g. Crossan *et al.*, 2017; Crossan *et al.*, 2014) to measure leader character. The assessment asked peers to rate the senior managers in terms of their likelihood to demonstrate 61 leader-specific behaviors. These behaviors are classified into 11 character dimensions: transcendence, drive, collaboration, humanity, humility, integrity, temperance, justice, accountability, courage and judgement. A sample leader-specific behavior for rating is: "Displays resolve and stays committed to see things through."

The scale scores ranged from 1 (extremely unlikely) to 5 (extremely likely); the midpoint was 3 (unsure). The average score of the 61 items was used as the character measure in our analysis. The average score was used for a single reason. Utility analysis is a distinctly practical tool and is concerned with whether using a certain assessment instrument such as the LCIA has the potential to improve the value of the selection and employee development process. Prior theorizing and research have shown that organizations should consider the 11 leader character dimensions in a holistic way rather than focusing on only a select few of the dimensions (e.g. Crossan *et al.*, 2017). Further, we could think of no compelling reason why

organizations would only use one or a subset of the character dimensions in making placement decisions. The Cronbach's alpha was 0.95 (see Table 1). Furthermore, to confirm the appropriateness of aggregating our rater scores, we examined the intraclass correlation coefficient (ICC[1]). The ICC[1] value was 0.13 and well above the 0.05 guideline (e.g. LeBreton and Senter, 2008; Reise *et al.*, 2005), indicating non-ignorable sharedness and hence justifying the aggregation of rater scores.

Job performance. The direct supervisors were asked to rate the performance of the senior managers using an eight-item measure of job performance. Assessments were administered before placement as part of an annual succession planning process. The measure was developed in collaboration with human resource and leadership development executives from the organization as it was critical to use items that were relevant to the organization, and the most senior leadership positions, on a go-forward basis. Direct supervisors were asked to rate managers on each of the eight items, scoring the manager based on performance in their current position as well as aspects of performance that were considered important to promotion and job performance overall. A sample item is: "How effective would this person be as a leader of a structured cross-functional team?" The scale scores ranged from 1 (low) to 7 (high). The average score of the eight items was used as the job performance measure in our analysis. The Cronbach's alpha was 0.91 (see Table 1). The ICC[1] value was 0.39.

Results
The means and standard deviations of the variables measured, as well as the correlations among these variables, are shown in Table 1. The correlation between the leader character measure provided by peers and performance assessed by the supervisor was 0.30 ($p < 0.01$).

As explained in the introduction, the estimate of SD_y is challenging for jobs that do not have objective markers of performance. We used 70% of salary as a proxy of SD_y. Therefore, using the data required to calculate ΔU from the Brogden-Cronbach-Gleser model leads to an estimate of CAD \$564,128 for the use of the LCIA over the expected tenure of 15 years, which is equivalent to CAD \$37,609 yearly (ROI: 23,505%) and CAD \$375,285 and CAD \$37,529 yearly (ROI: 15,637%) over a tenure of 10 years.

Supplemental analyses – adjustments to the basic utility analysis formula
We considered five adjustments to the basic utility analysis formula designed to improve the precision of our estimates. These adjustments center on the impact of employee flows (Boudreau, 1983b), probationary periods (De Corte, 1994), departures from top-down hiring (Murphy, 1986), economic adjustments (e.g. variable costs, marginal tax rates and discounting; Boudreau, 1983a) and the incremental validity of the LCIA over current placement practices at the organization (Boudreau, 1991; Raju and Burke, 1986). We decided to discard the first three of these adjustments given that they do not appear to be relevant to the focus of the present study: to examine the potential utility of promoting employees based on leader character. We briefly explain the nature of each of the adjustments we considered.

Employee flows modify the basic utility analysis formula to account for the effects of the entrance and exit of employees over several years, including factors such as increases in the overall quality of employees after the LCIA is implemented. This adjustment requires careful tracking of employee cohorts over multiple periods in time to establish relationships between performance, turnover and the LCIA. However, we collected our data at a single point in time, and hence estimating the trajectory of the relationships among the variables of interest would require several assumptions which we were not prepared to make. Probationary periods involve estimating the effects of the dismissal of employees who do not meet a particular standard. It is highly unlikely this scenario applies to our study given that the employees

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Character	4.38	0.29	(0.95)												
2. Accountability	4.56	0.35	0.82***	(0.87)											
3. Collaboration	4.32	0.38	0.85***	0.58***	(0.87)										
4. Courage	4.57	0.28	0.70***	0.79***	0.42***	(0.81)									
5. Drive	4.38	0.32	0.76***	0.76***	0.53***	0.77***	(0.86)								
6. Humanity	4.20	0.43	0.82***	0.48***	0.87***	0.32**	0.40***	(0.91)							
7. Humility	4.29	0.37	0.93***	0.68***	0.86***	0.51***	0.59***	0.89***	(0.90)						
8. Integrity	4.56	0.34	0.88***	0.75***	0.71***	0.62***	0.64***	0.69***	0.80***	(0.88)					
9. Judgment	4.42	0.32	0.79***	0.79***	0.50***	0.75***	0.68***	0.45***	0.62***	0.66***	(0.92)				
10. Justice	4.31	0.36	0.90***	0.65***	0.81***	0.50*	0.59***	0.82***	0.86***	0.83***	0.63***	(0.88)			
11. Temperance	4.29	0.43	0.71***	0.36***	0.64***	0.24***	0.40***	0.67***	0.69***	0.54***	0.44***	0.65***	(0.91)		
12. Transcendence	4.28	0.30	0.78***	0.65***	0.55***	0.65***	0.66***	0.49***	0.66***	0.67***	0.71***	0.64***	0.46***	(0.81)	
13. Performance	5.40	0.83	0.30**	0.28**	0.23*	0.17§	0.35***	0.23*	0.31**	0.24*	0.28**	0.23*	0.21*	0.18§	(0.91)

Note(s): $N = 111$. Leader character is the composite of all leader character dimensions. Cronbach's alpha coefficients of reliability are on the diagonal in parentheses.
§$p < 0.08$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

considered for promotion had previously been identified as high potential employees. Finally, departures from top-down hiring estimate the impact of offers being rejected by the best candidates. The pool of employees we studied was composed of individuals with the potential to perform in the new position and, importantly, who have expressed an interest in advancing within the organization. Therefore, it is highly unlikely that any candidate offered a promotion would reject such an offer.

We implemented two adjustments to the basic utility formula: the impact of various economic factors, and the incremental validity of the LCIA over current placement practices at the organization we studied. Sturman (2000) reported that these adjustments have the highest impact in reducing inflated estimates – on average by 84%. Boudreau (1983a) detailed three economic factors that impact the potential returns of implementing a new instrument. First, variable costs model the additional costs incurred by the organization due to performance increases stemming from the implementation of the new instrument (e.g. higher compensation, such as bonuses due to increases in employee performance) by multiplying SD_y by a value that is representative of all variable costs identified by Boudreau (1983a). Second, the adjustment for taxation rates reflects the impact of taxation on potential profits and costs of implementing the new instrument. This adjustment is obtained by multiplying SD_y and C by an overall taxation rate (Boudreau, 1983a). Third, adjusting for discounting estimates the opportunity costs associated with investing the resources necessary to obtain and implement the new instrument that would have been invested otherwise, to account for the fact that "future monetary values cannot be directly equated with present monetary values" (Boudreau, 1983a, p. 563). In practical terms, the adjustment for discounting involves replacing the T component of the basic utility analysis formula with a modified T that includes a yearly compounding effect of a discounting rate (see Boudreau, 1983a, for more details on how to arrive at the modified T). Lastly, adjustments for the incremental validity of any new instrument over current assessments can be applied, in most cases, by subtracting the correlation between the current placement method and the criterion (job performance) (r_{old}) from the correlation between the new instrument (the LCIA) and the criterion (r_{new}) and using the difference in correlations in place of r_{xy} in the basic utility analysis formula.

Altogether, the modified formula for utility analysis after implementing these adjustments can be expressed as:

$$\Delta U = N \times T_{mod}(r_{old} - r_{new}) \times Z_{xs} \times [SD_y \times (1 + VC) \times (1 - TAX)]$$
$$- \{N[C \times (1 - TAX)] \div SR\}$$

where,

ΔU = Marginal utility or the estimated dollar-value savings over tenure as a result of using the selection device in placement

N = Number of candidates placed into a position per year

T_{mod} = Modified tenure in years of employees in a position according to discounting rate

r_{old} = Correlation between the current selection device or predictor and the criterion or job performance measure in the employee population

r_{new} = Correlation between the new selection device or predictor and the criterion or job performance measure in the employee population

Z_{xs} = Average performance of selected candidates in standardized units

SD_y = Dollar value of a standard deviation in the criterion

VC = Variable costs rate

TAX = Taxation rate

C = The cost incurred in acquiring and administering the selection device per candidate

SR = Selection ratio or the number of candidates placed into a position per year, divided by the number of candidates available per instance of placement

The necessary information required to complete the various economic adjustments was either not known or not made available to us. Additionally, the organization did not have any data on the validity of their current placement practices, rendering it challenging for us to assess the incremental validity of the LCIA. However, Sturman (2000) reviewed the literature on utility analysis and developed a realistic range of parameters for use in subsequent calculations. Thus, we conducted a series of utility analyses using the parameters provided by Sturman (2000) for economic factors and incremental validity to produce a range of estimates for the potential utility of applying the LCIA in placement. Specifically, we selected the minimum and maximum parameters reported for each adjustment, and we also calculated the midpoint for each adjustment. This approach resulted in three parameters per adjustment.

The maximum value reported by Sturman (2000) for the incremental validity of a new instrument (0.38) is, in fact, larger than the actual correlation we found in our study (see Table 1). Therefore, we deviated from Sturman (2000) to set the maximum value for this parameter at 0.30 and calculated a midpoint value accordingly.

These procedures resulted in the following minimum, midpoint and maximum parameters for each adjustment: variable costs rate (−0.02, −0.185, −0.35), taxation rate (0.30, 0.465, 0.63), discounting rate (0.01, 0.06, 0.11) and incremental validity (0.05, 0.175, 0.30). The final set of estimates was produced by conducting separate utility analyses for every possible combination of the various adjustments, resulting in a total of 81 estimates (see Appendix for an illustration). These analyses were conducted for expected 10-years and 15-years tenures, for a total of 162 estimates. A summary of the results is shown in Table 2. The data in Table 2 reveal that the lowest utility estimate is CAD \$8,027, for the condition with the highest economic factors and lowest incremental validity at the 10-year tenure level. The ROI for this estimate is 904%. The highest utility estimate includes the adjustments for the lowest economic factors and highest incremental validity at the 15-year tenure level: CAD \$357,551 and an ROI of 21,283%. These results indicate that there is still a positive and sizeable ROI associated with the LCIA in employee placement even with highly conservative adjustments.

Discussion
Are organizational investments in human resource programs and leadership development — in both time and money — justified by their returns? Do such programs have a dollars-and-cents

| Δr | M | 15-Year tenure | | | M | 10-Year tenure | | |
		SD	Min	Max		SD	Min	Max
0.05	\$26,863	\$11,668	\$9,998	\$58,192	\$19,502	\$7,520	\$8,027	\$39,218
0.175	\$97,232	\$41,330	\$37,214	\$207,871	\$71,761	\$26,540	\$30,315	\$141,462
0.30	\$167,601	\$70,994	\$64,430	\$357,551	\$125,459	\$50,242	\$52,604	\$243,706

Note(s): The results for each level of incremental validity are based on 27 estimates using 70% of annual salary as SD_y. Δr = estimated incremental validity of the LCIA

Table 2.
Descriptive statistics for adjusted utility estimates across expected 10- and 15-year tenure periods

return on the investment? What is the effect size associated with such programs? These are important questions to consider for any organizational decision-maker, in particular given the demand for increased accountability (e.g. from senior executives), the push for transparency (e.g. board members and shareholders) and the tightening budgets in organizations. Hence, Luthans *et al.* (2015) concluded that "the challenge of assessing the investments in and dollar return from human resources is now more pertinent than ever" (p. 241).

Character is an essential ingredient of leadership that has been neglected for far too long in both the empirical and practitioner literature on leadership. Perhaps this is because people think character is a highly subjective construct and hence more difficult to define and assess than specific competencies or skill sets that are part of — and tend to dominate — formal job descriptions. However, recent research has revealed a set of concrete behaviors associated with character dimensions that can be developed to strengthen character. Scholars have also begun to develop instruments to assess character and relate it to performance (see, for example, Crossan *et al.*, 2017; Riggio *et al.*, 2010; Wright *et al.*, 2017).

Organizational leaders will be more inclined to adopt selection and development tools – including assessment instruments such as the LCIA —— to facilitate character-based leadership if data show that such tools help provide a meaningful financial return. The objective of our study was to understand how much character matters financially in selecting employees for senior leadership positions in a large Canadian manufacturing organization. The results of our analysis are both illustrative and illuminating. Our data revealed a range of utility estimates from ΔU of CAD \$8,027 over a 10-year tenure period to CAD \$564,128 over a 15-year tenure period. The estimates we provided include various adjustments to the basic utility analysis formula to address the myriad dynamics at play in organizations, such as economic conditions. We believe it is entirely plausible, and consistent with Hunter *et al.* (1990), that the dollar value associated with selection and placement based on instruments that assess leader character further increase for individuals at even higher levels in the organization, that is, for those individuals whose jobs are even more cognitively complex such as CFOs, COOs, CEOs and directors of boards.

Further, we assert that selecting and promoting managers on character and developing their character-based leadership will not only leverage their own contributions to the organization but also contribute to a trickle-down effect on employees below them. This is because the organization's leaders are expected to model the behaviors they want to promote throughout the organization. For example, leaders who act and speak with humanity beget others who act in similar ways. Any character-associated behaviors expressed or enacted by senior leaders are perceived by others, especially those at the early stages of their leadership development, as the behaviors that are valued in the organization (e.g. Crossan *et al.*, 2016; Foulk *et al.*, 2016; Kolk *et al.*, 2010; Shin, 2012).

Thus, behavioral contagion may add to the estimated dollar value. The reverse is also true: to ignore character in recruitment and selection may cost the organization in productivity and legal settlements. For example, dysfunctional behaviors that are rooted in character deficiencies – for example, rude, disrespectful, inflexible and unfair behaviors – are likely to create an outflow of people who will not stand for that kind of behavior, meaning that, over time, organizations may lose capable people.

People may have difficulty believing that using the LCIA in placement could lead to a best-case yearly savings of 23% of a senior manager's annual salary. However, the potential costs of poor leadership due to deficiencies in character can be much greater than CAD \$37,609 a year. For example, workplace harassment settlements in Canada can rise to over \$100,000 in some cases, and they can amount to millions of dollars in the United States. The standards for senior managers in addressing claims of harassment are high. Those in senior management positions need to demonstrate integrity to hold themselves to a high moral standard and behave consistently with ethical standards; with courage to show an unrelenting

determination and perseverance in confronting the most difficult situations; temperance to conduct themselves in a calm, composed manner in addressing the issue; humanity to demonstrate genuine concern and care for the victims of the injustice; and judgment to make sound decisions in a timely manner based on relevant information and critical analysis of facts.

The costs associated with poor leader character tend to escalate as the position and authority of the leader increases. For example, Volkswagen has paid more than US$25 billion in fines, penalties and settlements since US officials charged the automaker in 2015 with breaking environmental laws by cheating on diesel emissions tests (e.g. Boston and Michaels, 2019; Ewing, 2018; Rogers and Spector, 2017). Martin Winterkorn, the CEO of Volkswagen during the scandal, was charged with fraud and could face a prison sentence. His salary in 2014 was US$18 million — a relatively minor component of the overall cost to the organization, which saw its stock drop by a third when the scandal broke (e.g. Bryan, 2017; Snyder and Jones, 2015).

How could the fortunes of one of the world's largest automakers deteriorate so rapidly? We believe the answer lies, in part, in the lack of character at the top of the organization. For example, a key element of good risk management is asking appropriate questions and getting truthful answers. And so, if a CEO, or any other senior executive for that matter, does not demand that leaders and managers root out unethical conduct by asking the tough questions and holding people accountable, then that bad behavior is likely to gradually spread like a weed throughout the organization. The German magazine *Der Spiegel* in 2013 compared Volkswagen's corporate culture to that of "North Korea minus the labor camps." Employees felt they had to obey directives and were actively prevented from flagging problems and raising concerns out of fear that doing so might jeopardize ambitious goals set by the senior leadership team. Winterkorn was convinced that diesel engines rather than electric vehicles were the company's future, and with most executives afraid to question him, it appears the automaker did everything it could to boost the sale of diesel-powered vehicles, even in the face of conflicting engineering and market information (e.g. Ewing and Bowley, 2015; Gapper, 2018). Nowhere in this story do we see a value-based culture characterized by humility, open-mindedness, consideration, integrity, temperance, courage or accountability – or for that matter, any other dimension of leader character.

Hence, as our results suggest, organizations in the public, private and not-for-profit sectors simply need to recognize the importance of assessing and developing leader character. The issue of leadership character can be ignored, but the price of doing so cannot be when paying for this neglect.

Strengths and limitations
Utility analysis is a quantitative and robust method of evaluating human resource programs. For example, the method allows human resource professionals to assess whether a selection program using a particular tool yields a positive utility versus selecting individuals at random. Our paper is an illustration of the potential utility of the LCIA in a selection process for senior managers. There are several strengths associated with our study. First, we used actual and objective multi-source data from the field. Second, we used supervisor assessments of performance rather than self-assessments. Supervisor ratings are commonly used in performance assessments and scholarly research. Third, we used a behaviorally based and validated instrument to assess character. Behaviorally based statements are the preferred method of assessment given that they measure what people actually do on the job, are less susceptible to biases outside the control of the person being evaluated and typically show higher inter-rater reliability than trait-based measures (e.g. Latham *et al.*, 2005; Latham and Wexley, 1994). Fourth, the performance assessment and the

assessment of character were conducted by different sources, hence eliminating common-method and same-rater bias. Fifth, we used a realistic estimate of SD_y based on actual salary information provided by the organization. Sixth, we included various adjustments in calculating the estimates using the basic utility analysis function. And while these estimates predictably declined in magnitude, the utility if the LCIA remained positive and appears to be of substantial value – an ROI over 900% is our most conservative estimate.

Nevertheless, as with any study, there are limitations that need to be acknowledged. First, there is a rich literature on the best methods to estimate the return of human resource interventions. Luthans *et al.* (2015) observed that "debates regarding the reliability, validity and utility of various approaches for quantifying the return on investment and value of human resources and development are far from resolved" (p. 241). We used a straightforward and widely recognized approach to estimate the return on investment of using the LCIA in placement (see, for example, Cascio and Boudreau, 2011; Luthans *et al.*, 2015; Tziner and Birati, 2015). Luthans, Youssef and Avolio (2007) explained that "research has found that the complexity of traditional utility analysis may actually challenge the credibility of its results as perceived by managers, possibly even reversing its intended impact" (p. 217). The approaches to utility analysis vary widely in depth, breadth and complexity. Hence, it is likely the different approaches result in somewhat different estimates. Second, the instrument we used to assess character – the LCIA – is one of several measures of character. The assumption that the estimated returns may be greater or smaller using other instruments is reasonable. Third, we used a concurrent validity design. Barrett *et al.* (1981) found no substantial differences in results between concurrent validity and predictive validity design. Nevertheless, future studies should explore this assertion in more detail and include measures of performance after individuals were placed in leadership roles. Fourth, although different raters assessed performance and leader character, our design does not allow us to tease apart whether character contributes to improved performance or whether those with high performance are seen as people of high character. Future studies therefore need to establish causality through training and developing character, including the use of control groups, to more firmly establish the impact of character-based leadership. Fifth, the administration of the LCIA at multiple time intervals to assess character – and its stability – would further strengthen our analysis. And lastly, utility analysis is based on the contribution of a measure, not of a construct. The assumption behind utility analysis is that the construct underlying the measure is driving the potential utility, but ultimately we are estimating the potential value of the measure itself. Prior studies have shown that leader character predicts performance. Future research designs should continue to include a myriad of variables to show that character predicts managerial performance – and thus has a dollars-and-cents return – beyond constructs known to predict performance including demographic variables.

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Appendix

Illustration of the calculation for the utility estimate

The following is an example of how each utility estimate was calculated. The formula presented below uses an expected tenure of 15 years, the minimum parameters for the three economic adjustments and the maximum parameter for the incremental validity of the LCIA over the current placement practices at the manufacturing organization. Note that values throughout have been rounded for ease of illustration.

$$\Delta U = N \times T_{mod}(r_{old} - r_{new}) \times Z_{xs} \times [SD_y \times (1 + VC) \times (1 - TAX)]$$
$$- \{N[C \times (1 - TAX)] \div SR)\}$$

Step 1: $\Delta U = 1 \times 13.865\ (0.30) \times 1.09 \times [\$115,500 \times (1-0.02)] \times (1-0.30)]$
$- \{1\ [800 \times (1-0.30)] \div 0.33)\}$

Step 2: $\Delta U = 13.865\ (0.30) \times 1.09 \times [\$115,500 \times (0.98) \times (0.70)] - \{\$1,681\}$

Step 3: $\Delta U = 4.160 \times 1.09 \times [\$115,500 \times (0.686)] - \{\$1,681\}$

Step 4: $\Delta U = 4.533 \times \$79,233 - \$1,681$

Step 5: $\Delta U = \$359,163 - \$1,681$

Step 6: $\Delta U = \$357,482$

ΔU = Estimated dollar-value savings over an expected 15-year tenure as a result of the LCIA

N = Number of candidates placed into a position per year (1 candidate)

T_{mod} = Modified tenure for 15 years based on a discounting rate of 0.01 (13.865) (provided by Boudreau (1983a))

$r_{old} - r_{new}$ = Difference between the validity coefficients of the current method (0.00) and the LCIA (0.30)

Z_{xs} = Average performance of selected candidates in standardized units, using a selection ratio of 0.33 (provided by the organization) and Naylor and Shine's (1965) tables for determining the increase in mean criterion score (1.09)

SD_y = Dollar value of a standard deviation in the criterion using 70% of annual salary ($115,500)

VC = Variable costs rate (0.02) (provided by Sturman, 2000)

TAX = Taxation rate (0.30) (provided by Sturman, 2000)

C = The cost incurred in acquiring and administering the selection device per candidate ($800)

SR = Selection ratio or the number of candidates placed into a position per year, divided by the number of candidates available per instance of placement (0.33)

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