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## Managerial Discretion and Constraints: A Bounded Leadership Model<sup>1</sup>

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#### **Abstract**

**Purpose:** We propose and test a new leadership model. Our model is an extension of the leaderplex model which proposes that leader cognitive and social complexities are linked with leader effectiveness indirectly, in a mediation scheme, through behavioral complexity. We enhance the leaderplex model with a leader's degree of managerial discretion as the moderator of the links in this mediation format.

**Methodology:** We test our model with a moderated mediation approach (Baron-Kenny four-step procedure and Preacher-Hayes bootstrapping methods).

Findings: We use results of interviews with top leaders in Poland and demonstrate that a leader's managerial discretion is a moderator affecting the mediation scheme assumed in the leaderplex model

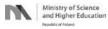
**Limitations:** The sample size is only 29 leaders. To preserve the respondents' anonymity, their opinions were evaluated by only one researcher who interviewed them directly. The results may be country specific (Poland).

**Originality:** We define new boundary conditions for the leaderplex model by showing importance of a leader's real position (managerial discretion) in an organization. Specifically, we show that the nature of the relationships between the variables of interest will change when a leader operates in one physical environment (e.g., high managerial discretion) rather than another (e.g., low managerial discretion).

Keywords: leadership, managerial discretion, constraints, effectiveness, complexity

JEL: C12, C21, C51, D91, M14

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## Introduction

Despite a plethora of contextual dimensions that research considers relevant for leadership processes (Johns, 2006; Oc, 2018; Porter and McLaughlin, 2006), one crucial aspect of context has been rather neglected: a leader's managerial discretion and its relevance to the leader's ability to navigate the constraints s/he faces (Clark, Murphy and Singer, 2014). Instead, when considering the contextual aspect of a leader's position within an organization, the literature typically focuses on a leader's formal (nominal) place in the hierarchy of networks (Alban-Metcalfe and Alimo-Metcalfe, 2013). We address this gap in the literature by focusing on the effect of leaders' managerial discretion (the "latitude of managerial action;" Hambrick and Finkelstein, 1987, p. 371; Wangrow, Schepker and Barker III, 2015) on the leadership processes, emphasizing their ability to overcome the constraints they face.

Porter and McLaughlin (2006) note that only a few studies directly addressed contextual factors as central variables of interest. They call for an increased emphasis not only on the context of leadership but also on the effects of interactions among various components of that context ("bundles of contextual elements," p. 573). We respond to this call and treat the two aspects – managerial discretion and the ability to overcome constraints – as a "bundle" of contextual elements that may jointly affect the relationships between leader capabilities and effectiveness.

Because our focus is on a leader's managerial discretion, bundled with the ability to overcome constraints, we position our study within the theoretical framework of behavioral complexity (Hooijberg and Quinn, 1992; Denison, Hooijberg and Quinn, 1995). This theory argues that leadership must be performed not only through cognition but also through action. It further indicates that more effective leaders can engage in a greater variety of different and sometimes contradictory behaviors when dealing with a wide range of contexts (constraints) that are frequently characterized by paradox, contradiction, and complexity.

Rooted in the theory of behavioral complexity, the leaderplex model (Hoijberg, Hunt and Dodge, 1997) proposes that leader cognitive and social complexities are linked with leader effectiveness indirectly, in a mediation scheme, through behavioral complexity.

In our study, we enhance the leaderplex model with a leader's managerial discretion as the moderator of the links in this mediation format. To simplify the structure of the resulting model, we aggregate the cognitive and social capabilities into a single construct and refer to it as a cognitive-social complexity. Specifically, we posit that

the ability to overcome constraints – which we consider an aspect of behavioral complexity – mediates the relationship between cognitive-social complexity of a leader and effectiveness, while a leader's managerial discretion moderates these connections. We claim that the nature of the relationships between the variables of interest will change when a leader finds him/herself in one physical environment (e.g., high managerial discretion) rather than another (e.g., low managerial discretion).

Because we assign a prominent role to a leader's managerial discretion and his/her ability to navigate constraints, we call our model the Bounded Leadership Model, also in modest analogy to Simon's (1957) concept of "bounded" rationality or to the idea of leaders' "bounded" choices by Osborn, Hunt and Jauch (2002).

Clark et al. (2014) explored the conditions under which leaders would be most able to affect their organizations. They indicate that among the common factors – like the task at hand, subordinates, the organization itself, or the external environment – the organization's ownership and governance structure (i.e., who owns and monitors the organization) have received little empirical attention. They find that the ability of leaders to influence their organizations depends on such dynamics. Our study advances research in this direction, as we focus on top leaders (executives, CEOs) who are vital to the performance and survival of organizations (Waldman et al., 2001). We define new boundary conditions for the leaderplex model by including the managerial discretion of a leader within an organization – as the moderator of the indirect link between cognitive-social complexity of the leader and effectiveness – through the leader's ability to overcome constraints as a mediating variable (the moderated mediation structure).

After describing our research method, we estimated the bounded leadership model based on the data from individual interviews with top-level leaders in Poland. We conclude with a discussion of the results, implications, and issues for future research.

## **Theoretical framework**

Factors that determine the effectiveness of a leader have long been of interest to organizational sciences (Oc, 2018). Because leaders face dynamic, complex, and most often contradictory settings, the theory of behavioral complexity is the prominent approach to study leader effectiveness (Hooijberg and Quinn, 1992; Denison et al., 1995) rooted in the competing values framework (Quinn and Rohrbaugh, 1983). The theory of behavioral complexity has been proposed with respect to Quinn's (1984; 1988) model of leadership roles that addresses issues of contradiction and paradox inherent in leadership

behaviors. The Quinn's model is based on the assumption that cognitive complexity, i.e., a leader's ability to recognize and react to various paradoxes, contradictions, and complexities in the environment, is one of the necessary conditions for effective leadership (e.g., Jacques, 1986). Specifically, the leader's cognitive complexity refers to the leader's ability to recognize (through cognitive differentiation) and relate (through cognitive integration) to various dimensions of cognitive space (Hooijberg et al., 1997). The focus is on "how" an individual organizes information rather than simply on "what" the aspects of the thinking are, i.e., the knowledge content (Hooijberg et al., 1997).

Denison et al. (1995) extended Quinn's model with a behavioral complexity element, i.e., the leader's ability to both conceive and implement multiple and contradictory roles (actions) rather than only cognitions, as implied by environmental and organizational contexts.

Researchers distinguish two key components of behavioral complexity, namely behavioral repertoire and behavioral differentiation (Hooijberg, 1996; Hooijberg et al., 1997). Behavioral repertoire refers to a portfolio of leadership roles, from which a leader can choose in accordance with a given situation and, thus, meet the expectations of various stakeholders. Behavioral differentiation, on the other hand, refers to the ability of leaders to choose roles adequate to the organizational situation "more adaptively, more flexibly, more appropriately, more individually, and more situation specifically" (Hooijberg et al., 1997, p. 389).

Hooijberg et al. (1997) expanded Denison et al.'s (1995) work on behavioral complexity with the social complexity construct, which reflects an individual's ability to understand his/her social setting; and it is also important for effective leadership. Formally, they define social complexity as the "leader's capacity to differentiate the personal and relational aspects of social situation and integrate them in a manner that results in increased understanding or changed action-intention valences" (p. 382). The level of social complexity of a leader may be evaluated through his/her ability to discriminate and recognize the various dynamics of a given social situation over time (social differentiation). This facet of social complexity is a function of the leadership's ability to control its emotions, but also to be aware of its value preferences and its level of self-complexity. The second facet of social complexity is social integration: the leader's ability to synthesize the various elements of a social situation, which will allow him/ her to establish and enforce norms but also to achieve trust and reputation to improve leader effectiveness. Hooijberg et al. (1997) present a comprehensive treatment of the three aspects – cognitive, social, and behavioral – in an integrative framework: the leaderplex model. They propose that the leader's cognitive and social complexities indirectly determine leader effectiveness through behavioral complexity as the mediator.

The leaderplex model is particularly relevant in studies of leadership at the highest levels of organizations, where cognitive and social intelligence and behavioral complexities are of greatest importance (Carmeli and Halevi, 2009; Osborn et al., 2002). Furthermore, Hooijberg et al. (1997) hint at a possibility that levels of some contextual moderators may affect the second link in their mediation scheme; i.e., from behavioral complexity to leader effectiveness. Specifically, they propose that the organizational relationship (superior or inferior) between the leader and his/her superiors and subordinates may affect this connection.

In another attempt to link the aforementioned complexities to leader effectiveness, Boal and Hooijberg (2000) presented the integrative model of strategic leadership. In this new model, the behavioral complexity has been moved from its mediator position in the leaderplex model to the predictor function, co-determined by cognitive and social complexities. In return, these researchers propose leadership abilities to learn (absorptive capacity) and to change (adaptive capacity) in combination with managerial wisdom as the mediators of the links between the predictors and leader/organizational effectiveness. Boal and Hooijberg (2000) also propose several moderators in their integrative model in relation to the first part of the mediation scheme; i.e., the links between the complexities (shaped by the emergent theories of leadership) and the mediators (the capacities and managerial wisdom). As possible moderators, they suggest the leader's vision (visionary leadership), charisma (charismatic leadership), and ability to intellectually stimulate, inspire, and pay individual attention/consideration to the subordinates (transformational leadership).

Zaccaro et al. (2018) offered a framework in which they also integrate some situational parameters as moderators of leadership processes. Precisely, they consider the degree to which leaders display the capacity to be flexible in their leadership role as the moderator of this situational responsiveness. In this integrated model, the flexibility is achieved by combining leader cognitive and social adaptation skills.

According to Hooijberg et al. (1997), the leaderplex model was designed to allow researchers to advance the studies on leader complexity. The leaderplex model is a holistic proposition that integrates complex leader role behaviors with an endless number of contingencies occurring in complex contexts that leaders face. In our model, we borrow the backbone of the leaderplex structure and focus on the links between cognitive/social

complexities via behavioral complexities that lead to effectiveness. This is the focal mediational part of the leaderplex model.

In the leaderplex model, the leader's cognitive and social complexities are presented as separate entities, with each complexity furthermore divided into differentiation and integration components. All complexity dimensions are linked with each other through several interwoven connections. As mentioned above in the introduction, our Bounded Leadership Model simplifies its structure and aggregates both cognitive and social capabilities into one construct referred to as a cognitive-social complexity. Zaccaro et al. (2018) also combine cognitive and social adaptation skills into one construct that they label "leadership capacities," which represent relatively mutable and proximal leader knowledge, skills, and abilities.

Since context plays the key role in leadership research, we single out a specific contextual factor that we consider to be most relevant in the shaping of leadership processes: the leader's managerial discretion in the organization. We assign it the role of a (common) moderator in the model's mediation structure. The common moderator designation means that – in our model – it simultaneously affects two mediation links: one from the predictor(s) to the mediator (the first stage) and one from the mediator to the outcome variable (the second stage). In summary, we aggregate the moderator schemes from the two abovementioned models (leaderplex and integrative) and incorporate them as the common moderator of the two mediation stages. Thus, we take Hooijberg et al.'s (1997) idea a step further and develop the Bounded Leadership Model that incorporates not only cognitive, social, and behavioral complexity but also the leader's managerial discretion as the moderator of links between the variables of interest.

## **Hypotheses**

## **Cognitive-Social Complexity and Leader Effectiveness**

The theory of behavioral complexity (Denison et al., 1995) argues that cognitive complexity is the necessary condition for effective leadership. Hooijberg et al. (1997) similarly note that "cognitively complex individuals process information differently and perform certain tasks better than cognitively less complex individuals" (p. 378). These researchers further explain that people cognitively more complex search for more information and spend more time interpreting it compared to cognitively less complex individuals. People situated high on this dimension recognize more dimensions when discriminating among stimuli (cognitive differentiation) and see more commonalities among these categories (cognitive integration), which increases effectiveness.

Hooijberg et al. (1997) propose their leaderplex model as an extension of the theory of behavioral complexity by adding to it the social complexity component. They argue that leaders who situate high on social complexity can accomplish their "instrumental objectives" better than leaders who situate low on this construct. Socially complex leaders understand the political processes that may affect their organization better compared to individuals who situate lower on this dimension. Specifically, the former can better synthesize the various elements of a social situation which, in turn, allows them to achieve trust and reputation to improve leader effectiveness:

**H1.** The relationship between cognitive-social complexity and leader effectiveness is positive.

#### The Ability to Overcome Constraints and Leader Effectiveness

According to the theory of behavioral complexity, high effectiveness managers are perceived to have a greater degree of behavioral complexity compared to low effectiveness individuals. The theory of behavioral complexity assumes that behavioral complexity must be a sufficient condition for effective leadership. Researchers distinguish two key components of behavioral complexity, namely behavioral repertoire and behavioral differentiation. The behavioral repertoire delineates various roles from which a leader can choose when faced with conflicts, contradictions, or paradoxes. On the other hand, behavioral differentiation is the ability and willingness of leaders to differently perform leadership roles they have in their behavioral repertoire, depending on the contextual constraints (Hooijberg et al., 1997). In a similar vein, Denison et al. (1995) discuss the leaders' "ability to reconcile the competing demands of the natural environment, corporate social responsibility and internal competition" (p. 536).

In our study, we equate the behavioral complexity of a leader with his/her ability to overcome constraints. Leaders who can successfully navigate through the constraints (e.g., satisfy the expectations of all social actors who shape their environments) are said to be more behaviorally differentiated compared to their counterparts who do not display such capacities (Hooijberg et al., 1997). Thus, the behaviorally differentiated leaders can better meet the diverse demands of their environment and be more effective compared to individuals who do not have the capacity to recognize and react to changing dynamics (paradoxes, contradictions, complexities) in their environments (Denison et al., 1995). In essence, successful managers can recognize the contradictory pressures on the managerial job (Belasen and Frank, 2008) and select appropriate behaviors to navigate across contradictory demands from diverse constituencies (Pounder, 1999).

Structural norms also determine the appropriateness of behavioral choices executed by leaders. For example, Porter and McLaughlin (2006) note that leadership is constrained by an organization's culture, which frames and shapes behaviors. Ammeter et al. (2002) emphasize another constraint in the form of accountability - the necessity to justify decisions to other players – which also affects leadership behaviors by making leaders more thoughtful in their decision-making activities which, in turn, may lead to better performance.

Espedal (2009) suggests that constraints may shape a maneuvering space for leadership. Leaders can influence and form their maneuvering space by, for example, exercising their abilities to overcome constraints. When constraints are absent or may be overcome, leadership has more room to maneuver and be more effective. Clark et al. (2014) indicate that top executives must be able to navigate the constraints they face to be successful. Salancik and Pfeffer (1977) showed that external constraints - such as those from powerful parties - may hinder leader effectiveness.

Miller (2002) suggests that the ability of individuals to navigate any external change successfully and cope with the accompanying stress is the key determinant of leadership success. He calls this ability the "personal change adaptability" and posits that successful leaders display higher adaptability levels compared to others in the organization. On the other hand, leaders with low adaptability will be more likely to fail because they are unable to cope with external and internal pressures. As Miller (2002) concludes, only strong and skilled leadership that can survive – if not thrive – even during periods of extreme turbulence will mitigate the negative effects of such pressures and, thus, lead to better performance.

Finally, Schilling (2009) finds that an adverse environment of a leader (e.g., conflicting organizational structures and processes, intense corporate environment, pressures exerted by external forces) may contribute to "negative leadership" (deviant and counterproductive workplace behavior, "abusive supervision," Tepper, 2000) which, in turn, negatively affects organizational results. Thus, a leader unable or unwilling to cope with such constraints and limitations may have serious negative consequences for the organization:

**H2.** The relationship between the ability to overcome constraints and leader effectiveness is positive.

## Cognitive-Social Complexity and the Ability to Overcome Constraints

In their leaderplex model, Hooijberg et al. (1997) propose that cognitive and social complexity dimensions tend to have a positive effect on behavioral complexity. They base their conjecture on the Theory of Planned Behavior (Ajzen, 1991) and its predecessor, the Theory of Reasoned Action (Fishbein and Ajzen, 1975). Specifically, Hoojiberg et al. single out cognitive and social integration as directly and positively linked to both facets of behavioral complexity: behavioral repertoire and behavioral differentiation. According to these researchers, leaders who score high on cognitive and social integration will be more likely to engage in a wide array of leadership roles (behavioral integration) to meet the demands of their environment. As mentioned earlier, we consider the leaders' ability to navigate constraints as characteristic of such behavior.

**H3.** The relationship between cognitive-social complexity and the ability to overcome constraints is positive.

#### The Mediating Role of the Ability to Overcome Constraints

As explained earlier, the core element of the leaderplex model is the assumption that behavioral complexity mediates the relationships between both cognitive and social complexities and leader effectiveness. That is, cognitive and social dimensions are precursors to behavioral complexity which, in turn, is a precursor to leader effectiveness. Behavioral complexity connotes not only cognition but also action, which is reflected in the ability to respond to any changing conditions.

The mediating role of environmental constraints in similar settings was reported in several studies. Pereira and Gomes (2012) show that the constraints of the social context (social climate) mediate the relationship between transformational leadership and organizational performance. Federici (2013) also predicts that contextual constraints to autonomy may mediate the relationship between self-efficacy (competencies) and job satisfaction (performance).

We also note that, in her analysis of Lech Walesa's transition to constituted leadership, Lussier (2010) focuses mainly on the constraints of authority. In conclusion, she states that perhaps the greatest challenge for a leader is to manage constraints. Lussier (2010) describes the ability to overcome constraints as a significant factor in the relationship between Walesa's skill set and performance; although she did not specifically refer to this construct as the mediator. All these findings provide additional support for the

mediation effect, as further suggested by the combined mediational framework of the three hypotheses formulated above:

**H4.** The ability to overcome constraints will mediate the relationship between cognitive-social complexity and leader effectiveness.

## The Moderating Role of Leader Managerial Discretion on the Link **Between Behavioral Complexity and Leader Effectiveness**

In their leaderplex model, Hooijberg et al. (1997) assume that certain contextual moderators may affect the relationship between behavioral complexity and leader effectiveness. Specifically, they propose that the organizational relationship (superior or inferior) between a leader and his/her superiors and subordinates may affect this connection. Thus, Hooijberg et al. (1997) hint at a possibility that the second link (between behavioral complexity and leader effectiveness) in the mediational structure may be affected by the levels of some moderators.

Hambrick and Filkenstein (1987) note that top managers can influence a firm's performance only if they have an adequate degree of managerial discretion for their actions. Specifically, they suggest that the amount of discretion that top managers enjoy will moderate the relationships between leadership behaviors (e.g., strategic choices) and organizational outcomes. The greater the discretion, the greater effect the leader's decisions will have on the organizational outcomes.

Yukl (1989) claims that a leader's position in an organization and the resulting power is "a way of bypassing the constraints of formal authority to get things accomplished" (p. 256). He further notes that managerial effectiveness depends, among other things, on how well a manager can overcome constraints, which depends on his/her level of autonomy (discretion).

Hoogh et al. (2004) emphasize the need to consider possible moderating variables when analyzing the leadership processes. They find that leadership of the charismatic genre is more strongly related to organizational profitability of firm owners than managing directors who do not own their firm. By offering leaders more "room to manoeuvre" (p. 453), firm ownership positively moderates the relationships between leadership behaviors and performance outcomes.

The abovementioned study by Espedal (2009) suggests that leaders need maneuvering room to successfully affect organizational performance and adaptiveness. This maneuvering room is shaped by the degree of formal authority, sources of authority (i.e., whether the leadership has worked for a mandate for itself), legitimacy to make decisions, freedom to act by making choices, and other constraints. The more maneuvering room for the leadership, the greater its autonomy and discretion, which results in higher organizational performance and adaptiveness (Alban-Metcalfe and Alimo-Metcalfe, 2013; Neubert, Hunter and Tolentino, 2016):

**H5.** Leader managerial discretion will moderate the positive relationship between the ability to overcome constraints and leader effectiveness. This positive relationship will be stronger for leaders with more managerial discretion.

# The Moderating Role of Leader Managerial Discretion on the Link Between Cognitive-Social Complexity and Behavioral Complexity

Boal and Hooijberg (2000) propose several moderators in their integrative model of strategic leadership that we may consider related to the first part of the abovementioned mediation scheme; i.e., the links between the complexities and the mediator. However, let us immediately note that one of those complexities was behavioral complexity itself, which obviously does not match the leaderplex model's structure. As possible moderators, Boal and Hooijberg suggest the leader's vision, charisma, and ability to intellectually stimulate, inspire, and pay individual attention/consideration to subordinates.

Bruch and Walter (2007) empirically investigate the hierarchical effects on leadership behaviors and outcomes. They find that higher and lower level leaders face fundamentally different contexts because upper-level managers enjoy greater autonomy and freedom of action (the ability to overcome constraints) compared to middle-level managers. Their greater discretion allows upper-level managers to engage in unconventional innovative activities and make risky decisions when needed. If necessary, they can overcome organizational constraints, as they enjoy greater "authority to initiate large-scale changes and to promote them through charismatic action-taking" (p. 712). They are not constrained by organizational regulations and have fewer limitations to their authority compared to lower-level managers:

H6. Leader managerial discretion will moderate the positive relationship between cognitive-social complexity and the ability to overcome constraints. This positive relationship will be stronger for leaders with more managerial discretion.

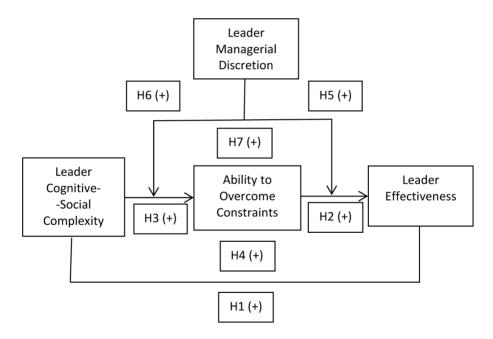
## The Moderating and Mediating Role of Leader Managerial Discretion

These arguments suggest a moderated mediating effect of managerial discretion on the effect of cognitive-social complexity on leader effectiveness through the ability to overcome constraints:

**H7.** Leader managerial discretion will moderate the indirect effect of cognitive-social complexity on leader effectiveness, such that this indirect effect will be stronger at more managerial discretion.

Figure 1 presents the study design.

Figure 1. The study design



## Data and methods

Unfortunately, behavioral complexity models, such as the leaderplex model (Hooijberg et al., 1997) or the integrative model of strategic leadership (Boal and Hooijberg, 2000), were hindered by underdeveloped metrics (Lawrence, Lenk and Quinn, 2009). Hooijberg et al. (1997) anticipate such impediments by emphasizing not only the need to use multiple assessment methods (including personal interviews), longitudinal designs

(required, for example, in mediational analysis), and participants (leaders) interested in and virtually devoted to the study. They further state that both leadership researchers and the leaders participating in a study must be fully committed to it, which is a condition that is not easily satisfied in a study of real-life top leaders.

Our research aimed to overcome those obstacles. First, as mentioned in the introduction, our respondents were real-life leaders of the highest statue either in the country (Poland) or in their respective organizations. Second, all these leaders personally knew the researcher who interviewed them; therefore, they were devoted to and intrigued by the study. Third, it would be impossible to test the two models in their full theoretical versions mainly due to the lack of metrics. To our knowledge, the first (and only) attempt to revisit the leaderplex model from a practical perspective is the study by Lawrence et al. (2009) conducted more than twenty years after the publication of the original model. The researchers focused on only one element of the leaderplex model – the behavioral repertoire – and developed an instrument to measure it. Therefore, in view of this lack of adequate metrics, we decided to apply the mixed methods approach (Stentz, Clark and Matkin, 2012). We combined the qualitative method of data collection with quantitative analysis to measure the elements of the Bounded Leadership Model.

## **Data Collection and Sample**

The sample of twenty-nine top leaders included in the current study participated in a qualitative study on leadership by Kozminski (2015). As a result of these interviews, we estimated the leaders' cognitive (predictor) and behavioral (mediator) complexities. In the current, quantitative, study, we gathered additional time-lagged data on leader performance (outcome) and managerial discretion (moderator) five years after surveying information on the predictor and mediator variables.

We estimated the behavioral complexity on the basis of information obtained directly from the leaders during the interviews. As mentioned above, the leaders' ability to overcome constraints was used as a proxy for their behavioral complexity. This knowledge could only be extracted from the leaders directly during the interviews, as it was unavailable through public records. We asked the leaders to candidly reveal the methods that they apply to navigate the constraints they face. This information was the core element of our study, as it could be obtained only directly from the leaders in a private setting that guarantees anonymity. On the other hand, we estimated their cognitive and social complexities based not only on the results of the interviews but also the leaders' publicly available historical record. The leaders' skills, competencies, abilities, and the like were available from the public domain prior to the time of the

study. During the interviews, we supplemented and enhanced this knowledge with the leaders' direct statements (qualitative data collected in-vivo) that provided information on how they recognize (cognitive and social differentiation) and combine (cognitive and social integration) their relevant skills, competencies, abilities, and other dimensions of cognitive and social space. Integrating the results of content analysis of the interviews with the leaders' public records in the form of triangulation permitted us to obtain a more comprehensive and valid assessment of leadership complexities.

We evaluated each leader's effectiveness five years later, in March 2018. Then, we compared the publicly available records of subsequent achievements and failures of the interviewed leaders with the findings from the interviews. Although our research utilized a cross-sectional design – due to the above-mentioned temporal separation of the measurements of the model's elements – we consider our study pseudo-longitudinal (Fisher, Dietz and Antonakis, 2017).

We focused on managerial discretion of a leader and its effect on the leadership processes. We posit that this discretion depends on the origin (source) of the leadership: Where and how did the leadership originate? In the end, based on the researcher's historical knowledge of the leadership origins of each leader – enhanced by the content analysis of the interviews – we identified five origins: political, institutional, entrepreneurial, expertise-based, and spiritual.

## **Dependent Variable: Leader Effectiveness**

Based on the content of the interviews along with the public record available on each leader throughout his/her career (before, during, and after being a leader), each of us subjectively and independently evaluated the overall effectiveness of each leader. The author-interviewer was using both sources of information (interviews and public records). The other author only relied on anonymous interviews. We rated each leader on a scale from 1 (very poor) to 5 (very high). The correlation coefficient between the two ratings was 0.774, which legitimated the aggregation of the individual team member scores. In the end, we averaged the ratings that we individually assigned to each leader, thus producing an aggregate leader effectiveness score.

## Independent Variable: Leader Cognitive-Social Complexity Leader Cognitive Complexity

Leadership researchers agree that the components of leader complexity should be measured in a context that enables and encourages the use of specific cognitive complexity elements (Hooijberg et al., 1997). Therefore, we assumed in this study that leader cognitive complexity will be expressed differently depending on the kind of source (origin) that elevated a leader to the current position. As explained above, we found five prevailing sources of leadership among the interviewed leaders – in the political, institutional, entrepreneurial, expertise-based, and spiritual domain – either in a pure form or as a combination of any two of them.

The author interviewer evaluated leader cognitive complexity after each interview based on content analysis of the five sources of leadership along with the knowledge of the leader's prior cognitive behavior (skills, abilities, and competencies), readily available in public records.

The content analysis reveals three dimensions of cognitive complexity: (i) anticipatory (search and interpret information), (ii) visionary (analyze information and act upon it), and (iii) self-reflective (assess own potential and use feedback from others). These dimensions also appear in the structure of leadership competencies and engaging leadership (LCELS; Alban-Metcalfe and Alimo-Metcalfe, 2013) – "future orientation," "building shared vision," and "reflective skills" – but also in Hart and Quinn's (1993) model of archetypal leadership roles ("vision-setter"). Each respondent was assigned to one (or more) of the sources, which helped evaluate his/her cognitive complexity with greater precision.

The *anticipatory* dimension of cognitive complexity is the leader's ability to predict and evaluate potential future developments or, more precisely, future circumstances and conditions that may influence leader effectiveness. Hooijberg et al. (1997) propose that leaders "who understand the relationships among the technological, market, financial, organizational structure, and other factors" (p. 394) and "leaders looking at trends in business" (p. 394) score high on cognitive (integration) complexity. The current study adopted this concept and evaluated the leaders' abilities to predict (anticipate) possible developments in the future that might be relevant to their domain. Very often one must support sophisticated, quantitative, and forecasting models – typically used for such purposes – with qualitative and constantly upgraded extrapolations of potential future scenarios. In summary, appropriate analytical and expert background generally supports the anticipatory dimension of the cognitive complexity. However, in many cases, it may require something intangible, like the ability to feel the future or – as one of the interviewees succinctly put it – possess a skill of "sniffing out the times."

The *visionary* dimension of cognitive complexity is the leader's ability to create future visions for oneself and followers.

Finally, the *self-reflection* dimension of cognitive complexity reflects the leader's ability to learn from successes and failures; i.e., to absorb any relevant knowledge and improve performance ("analyzer," Hart and Quinn, 1993). For example, Hooijberg et al. (1997) indicate that the evidence that cognitively complex leaders are, among other things, more capable of using feedback from others is scattered. Although, this is quite a sensitive issue. Most leaders have an extremely powerful ego and reluctantly accept any critical opinions about themselves.

Based on the interview protocol and prior public knowledge of the leaders' social capabilities, the author interviewer rated their cognitive complexity separately along the anticipatory, visionary, and self-reflective dimensions (from 1 = low to 5 = high complexity). We evaluated each leader's cognitive complexity by considering the sources that shaped his/her leadership.

#### Leader social complexity

Leader social complexity reflects an individual's ability to understand his/her social setting and is important for effective leadership (Hooijberg et al., 1997). We measured the social complexity of the leaders by focusing on two dimensions that emerged from the content analysis of the interviews: the value adding (creating) capacity and mobilizing capacity. These dimensions correspond to some of the dimensions of the LCELS mentioned earlier (Alban-Metcalfe and Alimo-Metcalfe, 2013): the "commitment to excellence" and "developing individual potential."

The value-creating dimension of social complexity reflects a leader's ability to propose norms, values, and patterns of behavior in order to ensure the desired effect on his/her followers.

The mobilization dimension of social complexity refers to a leader's energizing effect on his/her followers. This should generate an extraordinary degree of the latter's commitment, to the point of personal sacrifice, but also a spirit of initiative and ingenuity. To be effective, leaders must have the ability to "persuade, influence, and control others" (Ahearn et al., 2004, p. 311); they should possess a "political skill" (Ahearn et al., 2004, p. 311); and be "motivators" (Hart and Quinn, 1993).

Based on the interview protocol and prior public knowledge of the leaders' social capabilities, the author interviewer rated their social complexity separately along with the value adding and mobilizing capacity dimensions (on a scale from 1 = low complexity to 5 = high complexity). We evaluated each leader's social complexity by considering the sources that shaped his/her leadership.

#### **Leader Cognitive and Social Complexity Combined**

In the end, we obtained five ratings for each leader: three scores related to the cognitive complexity dimensions (anticipatory, visionary, and self-reflective) and two scores related to the social complexity aspects (value-creating and mobilization). They correspond, for example, to the four sub-dimensions of transformational leadership (individualized consideration, intellectual stimulation, inspirational motivation, and idealized influence; Bass, 1985; Bass and Avolio, 2000). They can also be found in the Leadership Behaviour Inventory (Spangenberg and Theron, 2001).

The leaderplex model (Hooijberg et al., 1997) treats the cognitive and social complexities as separate predictors of leader effectiveness. The current study combines the cognitive and social scores for each leader into one final aggregate, an arithmetic average. Noteworthy, Zaccaro et al. (2018) also combine cognitive and social adaptation skills into a single construct.

#### Mediating Variable: The Ability to Overcome Constraints

The leaders mentioned several leadership issues, including their perceptions of constraints, the feeling of being unable to achieve the maximum performance of leadership due to these constraints, and the conviction of the need to gradually overcome them. The awareness of constraints and the associated certain degree of pessimism were common among the respondents. Content analysis of the interviews identified seven constraints to leadership: political, ethical, cultural, emotional, motivational, institutional/competency, and informational/cognitive.

As in the previous cases, the author interviewer performed a subjective assessment of the leaders' ability to overcome each of the seven constraints based on the content analysis of each interview, using a rating scale of 1 to 5. There was no prior knowledge of such abilities from, for example, public records, as in the case of the leaders' cognitive-social complexity and effectiveness. Typically, leaders preferred not to reveal how they overcome their constraints and limitations. During the interviews, we were able to achieve this kind of exclusive insight into what they really think. Because we guaranteed anonymity, the leaders were frank and forthcoming in the assessment of their abilities to battle the (internal and external) constraints imposed on them. We calculated the leader's ability to overcome constraints as an average of ratings of the seven constraints to leadership.

## **Moderating Variable: Leader Managerial Discretion**

Based on the interview protocol and public knowledge of the source of leadership for each leader, the author interviewer rated the leader's degree of managerial discretion on a scale from 1 = low discretion to 5 = high discretion. The other author rated this construct based only on anonymous interviews. The correlation coefficient between the two ratings was 0.671. The average of the ratings was eventually produced, as in the previous cases.

#### **Estimation**

We used regression analysis to test our hypotheses. Because the mediating effect of the ability to overcome constraints is the key component of our theoretical framework, we tested for its presence using two complementary approaches, Baron and Kenny's (1986) four-step procedure and Preacher and Hayes' (2004) bootstrapping method. To test individual moderating hypotheses (Hypotheses 5–6), we used standard moderated regression analysis supplemented with a slope test so as to graphically identify the patterns of this moderation effect, as suggested by Aiken, West, and Reno (1991). Finally, for the moderated mediation effect, we used a two-step approach. First, we tested the index of moderated mediation, recently suggested by Hayes (2015, 2018), and then we fine-tuned this test with the bootstrapping procedure developed by Preacher, Rucker, and Hayes (2007). To avoid multicollinearity, we mean-centered the interacting variables when testing the moderating effects (Aiken et al., 1991).

Our measures were separated in time to reduce the common method bias (Neubert et al., 2016). The anonymity of the leaders' answers also contributed to the reduction of the common method bias (Podsakoff et al., 2003). We also attempted to mitigate a possible endogeneity threat by evaluating the leader effectiveness five years after collecting information on the predictor/mediator variables. This allowed us to make pseudo-casual references and minimize the possibility of reverse relationships in which outcomes may influence the predictors (endogeneity threats; Antonakis et al., 2010; Fisher et al., 2017).

## Results

In Table 1, we provide the correlation coefficients of the variables along with their means and standard deviations. In Table 2, we list the regression results. Models 1–2 predict the respondents' ability to overcome constraints (the mediator), whereas Models 3–5 predict leader effectiveness (the outcome). For each model, the variance

inflation factor (VIF) values were less than three, much lower than the critical value of ten, indicating no serious multi-collinearity. In all models, we report heteroscedasticity-adjusted (i.e., robust) standard errors.

**Table 1.** Descriptive statistics and correlations (N = 29)

Variable	Mean	Std. Dev.	Min	Max	1	2	3
1. Leader effectiveness	3.69	0.89	1.50	5.00	1		
2. Leader cognitive-social complexity	3.41	0.70	1.80	4.80	0.657**	1	
3. Leader ability to overcome constraints	3.48	0.69	2.14	4.57	0.697**	0.693**	1
4. Leader managerial discretion	0.55	0.51	0	1	0.037	0.190	0.286

<sup>\*\*</sup> Correlation is significant at the 0.01 level (2-tailed).

Table 2. Regression results

Variable	Ability to overcome constraints		Leader effectiveness			
	Model 1	Model 2	Model 3	Model 4	Model 5	
Constant	0.00 (0.09)	-0.03 (0.09)	3.69*** (0.13)	3.69*** (0.11)	3.61*** (0.11)	
Leader cognitive- social complexity (IV)	0.65***(H3) (0.10)	0.63*** (0.11)	0.86***(H1) (0.20)	0.42 (H4) (0.26)	0.30 (0.25)	
Leader managerial discretion (MOD)	0.22 (0.19)	0.23 (0.18)	-0.16 (0.27)	-0.31 (0.26)	-0.25 (0.22)	
IV x MOD		0.43‡ (H6) (0.24)				
Ability to overcome constraints (MED)				0.67**(H2) (0.20)	0.68** (0.19)	
MED x MOD					0.80*(H5) (0.31)	
R-squared	0.50	0.55	0.44	0.57	0.65	
F-test	21.97***	26.31***	9.99***	17.06***	13.16***	

Notes: N=29; robust standard errors in parentheses (variant HC1: Hinkley).

IV = Independent variable; MOD = Moderator; MED = Mediator.

p < 0.10; p < 0.05; p < 0.05; p < 0.01; p < 0.001; two-tailed tests).

Hypothesis 1 proposed that leaders with higher leader cognitive-social complexity show greater effectiveness. We find support for this hypothesis in Model 3 ( $\beta = 0.86$ ; p < 0.001). In Model 4, we find support for Hypothesis 2, which states that greater effectiveness is achieved by leaders who are better at overcoming constraints ( $\beta = 0.67$ : p < 0.01). In Model 1, we find support for Hypothesis 3, which states that greater cognitive-social complexity of a leader is associated with greater ability to overcome constraints ( $\beta = 0.65$ ; p < 0.001). In Models 3 and 4, we find support for Hypothesis 4, which states that the ability to overcome constraints mediates the relationship between leader cognitive-social complexity and leader effectiveness. Indeed, in Model 3, leader cognitive-social complexity is positively and significantly related to leader effectiveness; as stipulated by Hypothesis 1. However, when accounting for the mediator in Model 4, leader cognitive-social complexity was no longer significantly related to leader effectiveness ( $\beta = 0.42$ ; p > 0.10), which indicates a mediation. In Model 5, we find support for Hypothesis 5, which proposed that the positive relationship between the ability to overcome constraints and leader effectiveness is stronger for higher leader managerial discretion ( $\beta = 0.80$ ; p < 0.05). Finally, in Model 2, we find support for Hypothesis 6, which proposed that the positive relationship between leader cognitive-social complexity and ability to overcome constraints is stronger for higher leader managerial discretion ( $\beta = 0.43$ ; p < 0.10). The graphical slope test (Aiken et al., 1991) illustrates these two moderating effects in Figures 2 and 3, which show steeper positive curves at higher levels of leader managerial discretion. In the case of the relationship between leader cognitive-social complexity and the ability to overcome constraints, Figure 2 shows that both slopes are positive and that, indeed, the high discretion-related slope is steeper than the slope for low discretion. The slope in Figure 3 is rather flat for low discretion, which suggests that - even when a leader has a high ability to overcome constraints - this does not translate to better effectiveness when her/his level of managerial discretion is low. On the other hand, the curve is steeper and positive for high discretion cases. Having supported the moderation effect, we further tested the moderated mediation effect suggested by Hypothesis 7. For this purpose, we employed a two-step procedure recently recommended by Hayes (2015).

The first step involved a test of linear moderated mediation based on the index of moderated mediation developed by Hayes (2015). The test runs using the SPSS PROCESS code that generates a bootstrap confidence interval (CI) for this index, based on thousands of repetitions of resampling from the data with replacement. In our study, we used 5,000 bootstrap resamples. We obtained an index of moderated mediation of 0.7678, and the corresponding 95% bootstrap CI ranged from 0.3155 to 1.3872. As this CI does not contain zero and the upper bound is positive, the conclusion is that leader managerial discretion positively moderates the indirect effect of leader cognitive-social

complexity on leader effectiveness through the ability to overcome constraints (for a detailed discussion, see Hayes, 2015; and Hayes and Rockwood, 2017).

Figure 2. Conditional effect of leader cognitive-social complexity on the ability to overcome constraints at low and high values of leader managerial discretion

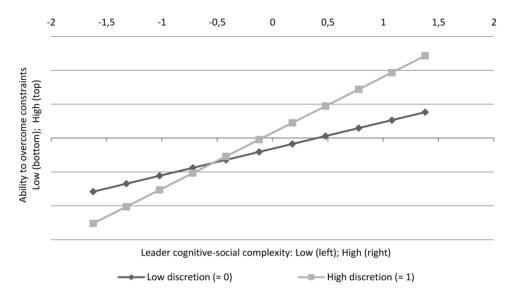
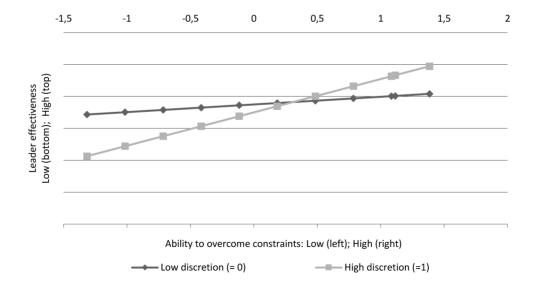


Figure 3. Conditional effect of the ability to overcome constraints on leader effectiveness at low and high values of leader managerial discretion



With the evidence of moderation of the indirect effect, the second step is to probe it using the pick-a-point (for the moderator) approach (Hayes and Rockwood, 2017) based on the bootstrap confidence intervals procedure (Preacher and Haves, 2004, 2008). We used the SPSS PROCESS to compute the moderated mediation effect at the two levels of the binary moderator, i.e., for low (= 0 or, after mean centering, -0.55517) and high (= 1 or, after mean centering, 0.4483) levels of leader managerial discretion. We used the same specification of 5,000 bootstrap resamples that produced the bias-corrected 95% confidence intervals (CIs) for the indirect effect of leader cognitive-social complexity on leader effectiveness. The indirect effect for the low level of the moderator was 0.0939, with the corresponding CI ranging from -0.1515 to 0.3638. Because this interval contained zero, the conditional indirect effect (on the moderator) of leader cognitive-social complexity on leader effectiveness was not significant at the low level of leader managerial discretion. However, the high level of the moderator produced different results. The indirect effect was 0.8617: the difference between the two effects was 0.7678, i.e., the abovementioned value of the index of moderated mediation, which constitutes a pairwise contrast between the two conditional indirect effects. The corresponding CI ranged from 0.4225 to 1.4476. As this CI is entirely above zero, we conclude that the indirect effect of leader cognitive-social complexity on leader effectiveness is significant and positive at the high level of leader managerial discretion.

In summary, our findings provide evidence that the conditional indirect effect is statistically different from zero (precisely speaking, greater than zero) at one value of the moderator (in our case — high) but not at another value (in our case — low), which strongly supports the scenario (based on Preacher et al., 2007) of moderated mediation posited in Hypothesis 7.

#### **Robustness Check**

For robustness check, we used the Hayes procedure to verify our hypotheses related to interactions (i.e., H5 and H6). The bootstrap results for H5 (the regression coefficient  $\beta=0.80$ ) produced the 95% CI that ranged from 0.2325 to 1.8762. Because this interval is entirely above zero, we obtained additional support for H5. The bootstrap results for H6 (the regression coefficient  $\beta=0.43$ ) produced the 95% CI that ranged from 0.0202 to 1.1653. Again, because this interval is entirely above zero, we find here additional support for H6.

#### Discussion

We focused on two factors: the leader's degree of managerial discretion (moderator) and his/her ability to overcome constraints (mediator). We found that the theoretical framework of behavioral complexity (Denison et al., 1995; Hooijberg and Quinn, 1992) is the most suitable for explaining these factors.

Rooted in the theory of behavioral complexity, the leaderplex model (Hoijberg et al., 1997) proposes that leaders' cognitive and social complexities are indirectly linked with leaders' effectiveness through behavioral complexity. We extended the leaderplex model by including the leader's degree of managerial discretion as the moderator of mediated relationship. We labeled this new model the Bounded Leadership Model, in reference to the theory of bounded rationality (Simon, 1957) and the concept of leaders' bounded choices (Osborn et al., 2002). We proposed measuring the leader's behavioral complexity through his/her ability to overcome constraints. As a result, we believe that our study makes two unique contributions to the leadership literature.

First, we demonstrated that a leader's managerial discretion is a relevant factor that affects the mediation scheme assumed in the leaderplex model. Specifically, we showed that the positive connection between the leader's cognitive-social complexity and the ability to overcome constraints is enhanced at higher levels of the leader's managerial discretion. We also confirmed that the positive link between the ability to overcome constraints and leader effectiveness is similarly enriched at higher levels of leader managerial discretion. Furthermore, we indicated that this level of discretion depends, among other things, on the source of leadership; i.e., how a leader acquired his/her current position in an organization. Thus, we defined new boundary conditions for the leaderplex model by including the real/authentic managerial discretion of a leader as the moderator of the assumed mediation links. We converted the mediation structure of the leaderplex model into the moderated mediation structure of the bounded leadership model.

In the extant leadership literature, a leader's (real) managerial discretion has not received such prominent attention as the one assumed in the bounded leadership model. Although several studies used moderators in the leadership models, they differed from the moderator in our study. For example, Ng, Ang and Chan (2008) develop a moderated mediation model, in which job autonomy played the role of the moderator of mediated links between the variables of interest. A similar study was conducted by Litano et al. (2016). Yang, Yen and Chiang (2012) find support for the moderating role of project type in the relationship between job satisfaction and performance, while Sturm, Vera, and

Crossan (2017) propose that leader character may be a moderator of the relationship between leader competency and performance. Wang and Rode (2010) posit a moderating role of both organizational climate and subordinate identification with a leader on the relationship between transformational leadership and employee creativity. Another study (Howell, Dorfma and Kerr, 1986) classifies the leader's control over organizational rewards as an enhancer (a moderator that augments the relationships between the variables of interest) of the effect of the leader's behavior on subordinates. The leader's position as a source of power and influence within an organization's hierarchy is also explicitly listed as a contextual factor in the study by Ammeter et al. (2002). Similarly, Mintzberg (1983) suggests that a leader's hierarchical rank and centrality may moderate the relationship between leader behaviors and political influence, while Leavitt (2003) indicates that hierarchies "provide clear markers that let us know how far and fast we are climbing the ladder of success" (p. 101).

Second, the uniqueness of our sample has no parallels in the literature. Unique samples provide opportunities to discover insights that might not have been reported in the previous literature (Heyler et al., 2016). We offer a glimpse into the minds of many real-life top-of-the-top leaders and managers in a given country. The depth and breadth of our sample give us greater confidence that the Bounded Leadership Model – that we tested across all those spheres of life – is not domain-specific but applies to any generally understood leadership and managerial processes.

Our Bounded Leadership Model is based on the somewhat forgotten leaderplex model proposed twenty years ago by Hooijberg et al. (1997). For example, a recent review of leadership research spanning twenty-five years (Dionne et al., 2014) mentions the concept of "leaderplex" only once (p. 9), and it does not associate it with any of the numerous leadership theories discussed. Besides the two abovementioned contributions, another purpose of our study was to bring the leaderplex model back to life by showing its potential. We believe that the leaderplex model is one of the most important efforts to describe complex relationships that take place within the leadership processes.

As in all research, our study is not without potential limitations. First, our sample size was small mainly due to the great uniqueness of our respondents in that only top-of-the-top leaders and managers of various institutions and organizations at the country and local levels were selected for the interviews. Because of the small sample size, we could not employ the usual confirmatory factor analysis tests to determine the model's reliability. Similar problems with small sample sizes plague research that must ask sensitive questions, which require confidentiality and anonymity, particularly at the organizational level (Jung, Chow and Wu, 2003). Notwithstanding this

limitation, the fact that we managed to obtain so many significant results is impressive. A similar conclusion, in defense of the small sample size, has been offered by Barker, Patterson and Mueller (2001) and by Strang and Kuhnert (2009).

Second, and this again relates to the uniqueness of our sample, due to the need to preserve the respondents' anonymity, we could not rely on more than one expert opinion when evaluating the leaders' various complexity dimensions. This exercise had to be performed by only one person, the co-author, who personally interviewed the leaders and guaranteed that no sensitive information would be linked to their identities.

Third, the study was conducted in Poland, implying that the results may be country – or culture-specific and less relevant in other national settings. Other studies are needed to test our model in other socio-economic and cultural environments that may shape leadership processes differently. However, because we examined many occupations, our study may have certain generalizability beyond the idiosyncratic context of one country, which might be of interest to general management and leadership scholars and practitioners.

We consider the Bounded Leadership Model to be a new prototype in leadership research. We unintentionally designed our model in a simplified format – due to the small sample size – with both cognitive and social complexities aggregated into one construct. Future research should attempt to disentangle the two complexities, as suggested by Hooijberg et al.'s (1997) model.

In the Bounded Leadership Model, we only included links that lead from various complexities of a leader to his/her effectiveness. We did not assume any reverse links that might indicate, for example, that leader effectiveness could affect the ability to overcome constraints. Furthermore, we did not assume a positive effect of leader effectiveness on leader managerial discretion. In his conceptual model, Yukl (1989) considers inverse links from "end-result variables" to "personal power" of a leader, which could be loosely equated with our "leader managerial discretion" concept. It is conceivable that increased (decreased) leader effectiveness may lead to increased (decreased) leader managerial discretion. Yukl (1989) also assumes reverse links from outcome variables to managerial behaviors, which appear parallel to the cognitive-social and behavioral complexities of a leader considered in our study. Longitudinal designs are needed to examine such fascinating possibilities.

#### Conclusion

We emphasized the importance of two factors for the effectiveness of the leader — leader managerial discretion and his/her ability to overcome constraints — which may somewhat alleviate recent dissatisfaction with the usefulness of leadership studies (Kellerman, 2012). Kellerman claims that senior-level leaders will become obsolete in the long run, as more power moves from them to followers. Our results provide evidence that — if leaders keep a certain level of managerial discretion and can simultaneously successfully navigate their constraints, their actions will result in effective outcomes, which may keep them from becoming obsolete.

The Bounded Leadership Model offers very important guidance on how we should select future leaders and trained to yield better performance. The standard approach is to focus on their abilities, competencies, capacities, and the like, in hopes that candidates who excel along those dimensions will be better leaders/managers. Our research strongly suggests that this is not enough. This may be a necessary condition but not a sufficient one. A successful leader/manager must be able to overcome various constraints that s/he will be facing throughout the career. The mere possession of competencies does not necessarily make an individual competent; they must be demonstrated by the person's behavior and actions (Kyndt and Baert, 2015). Successful leaders and managers display an array of proactive behaviors that include active adjustments to new conditions, using one's initiative, expressing voice, selling critical issues to others, taking charge to bring about change, proactively solving problems, implementing ideas, and network-building (Crant, 2000; Parker and Collins, 2010).

Moreover, what matters is how the leader achieved his/her current position, i.e., the source (origin) of his/her leadership. We show that higher managerial discretion positively moderates the already positive links between leader cognitive-social complexity and effectiveness through the mediating ability to overcome constraints. Therefore, future leadership-oriented programs should emphasize the leaders' ability to navigate constraints in addition to the generally understood leader capabilities by considering the leader's source of the current position. In short, the higher the managerial discretion, the better.

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