

Leader's paradox mindset, organisational change capability, and performance: a multi-level analysis

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Abstract

Purpose – This study aims to propose a multi-level (bottom-up) analysis to build an organizational change capability (OCC) development model by integrating paradox and social cognitive theories. Using these theories, OCC (Level 2) is influenced by the leader's paradox mindset (Level 1) and collective PsyCap (Level 2). The study also examined the moderating effect of magnitude to change on the effect of leader's paradox mindset on OCC.

Design/methodology/approach – The proposed hypotheses were tested empirically using data from 327 respondents and 48 work teams from 21 leading private higher education institutions in Indonesia. To analyze the data, a multi-level analysis was conducted with Mplus software.

Findings – The results showed that, in a cross-level relationship, leader's paradox mindset had a positive effect on OCC, whereas OCC mediated the effect of leader's paradox mindset on organizational change performance. On an organizational level, collective PsyCap affected OCC, and OCC significantly mediated the relationship between collective PsyCap and organizational change performance. Moreover, the authors found a moderating effect of magnitude on change of leader's paradox mindset to OCC.

Originality/value – This study used a multi-level analysis to evaluate the mechanisms of influence of leader's paradox mindset (bottom-up) on OCC and the moderation effect of magnitude to change in an Indonesian context.

Keywords Leader's paradox mindset, Collective psychological capital, Organizational change capability, Magnitude to change, Higher education, Indonesia

Paper type Research paper

Introduction

Organizations are currently facing rapid changes across political, economic, social and technological fields. The emergence of COVID-19, which was declared a global pandemic by the World Health Organization in January 2020, has caused greater volatility, uncertainty, complexity and ambiguity across organizations (Murugan *et al.*, 2020). Organizations must develop change capabilities to survive and succeed in implementing change (Meyer and Stensaker, 2006). Organizations that increase their change capability may achieve successful change more quickly and efficiently (Pagliarella, 2000).

Organizational change capability (OCC) is a combination of managerial and organizational capabilities that allows an organization to adapt competencies more quickly and effectively to survive and prosper (Judge and Douglas, 2009). OCC is generic for all other dynamic capabilities embedded in an organization (Oxtoby *et al.*, 2002), representing broad and dynamic organizational capabilities that allow firms to adapt legacy capabilities to threats, new opportunities and the creation of new capabilities (Judge and Elenkov, 2005). OCC has

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been widely explained on an organizational level, whereas the micro-foundation approach (Salvato and Vassolo, 2018), which describes OCC as a collective effort based on individual contributions through cognition and managerial action (Adner and Helfat, 2003), is limited. Cognition may explain why some top-level managers have a greater ability than others to anticipate, interpret and respond to evolving environmental demands (Helfat and Peteraf, 2009).

One thing experienced during change is tension. Paradox theory provides insights into the nature and management of opposing but interconnected tensions, which may appear contradictory but reinforce and support one another (Smith and Lewis, 2011). Miron-Spektor *et al.* (2018) proposes the paradox mindset to understand and embrace what is known, providing energy to increase innovation or performance, as evidenced in previous research, which has also found that a paradox mindset increases innovation behaviour (Liu *et al.*, 2019). Interestingly, research has not been conducted in the context of changes such as the COVID-19 pandemic. According to Morgeson *et al.* (2015), events that have novelty, disruption and criticality (such as the COVID-19 pandemic) influence the organization, with this effect potentially spreading within or across all levels of an organization, including an individual.

Another resource in handling the pressures of change is PsyCap, which is highlighted as a factor that fosters a sense of determination and positive attitude when attempting to adapt and succeed in uncertain times (Farroukh *et al.*, 2023). PsyCap studies at the individual level have been widely conducted, whereas studies at the team/collective level are still limited (Newman *et al.*, 2014). Collective PsyCap includes the psychological resources (Luthans and Youssef, 2007) and shared mental capacity (Heled *et al.*, 2016) necessary to face change (Huy, 2011). Organizations with high PsyCap with the confidence to try various paths to achieve goals (expectations) will be able to learn from experience or external knowledge more effectively (Luthans and Youssef, 2007).

This research proposes factors that influence OCC within the framework of paradox theory (Smith and Lewis, 2011) and social cognitive theory (Bandura, 1997). Firstly, paradox theory provides insights into the nature and management of tensions that often arise under change, which may appear contradictory but are mutually reinforcing and supportive (Smith and Lewis, 2011). Organizational leaders, as “strategic core” individuals (Morgeson and Hofmann, 1999), should have a paradoxical mindset to embrace the tension of opposites to generate energy in the face of change. Secondly, a leader’s paradox mindset is a cognitive factor that can influence OCC. Leaders can serve as role models (Shamir *et al.*, 1993) to show employees how to accept and accept contradictions in complex environments (Fang, 2005), particularly in Asian countries that tend towards paternalism. Sense-giving activities as an important leadership task (Foldy *et al.*, 2008), leader role models and the built environment are methods of how leaders may encourage learning, processes and contexts capabilities (Supriharyanti and Sukoco, 2023) when facing change. Based on the framework of social cognitive theory (Bandura, 1997), in addition to leaders’ personal factors, this study proposes collective PsyCap and magnitude of change as environmental factors influencing the development of OCC. Social cognitive theory (SCT) has been widely applied to the application of human behaviour in various fields (such as information systems in Chiu *et al.* (2006), but has rarely been applied at the organizational level, which is influenced by personal factors of leaders with multi-level analysis.

Using the framework of paradox theory and social cognitive theory, the aim of this study is to explore the impact of paradoxical thinking and collective psychology on OCC which, in turn, impacts organizational performance. Therefore, the value of this research is in bridging the literature gap and contributing to the body of research on leaders paradox mindset, collective PsyCap, magnitude of change, OCC and the various relationships among these variables. More specifically, this research aims to answer the following questions:

RQ1. How do leaders' paradox mindset and collective PsyCap affect OCC and performance?

RQ2. How does the magnitude of change moderate the influence of leaders' paradox mindset on OCC?

The study focuses on Indonesian private higher education (IPHE) handling changes related to the COVID-19 pandemic. Firstly, the COVID-19 pandemic has had an impact on higher education (HE), not only in developed countries, but also in developing countries such as Indonesia (Burki, 2020). A survey conducted by the International Labour Organization (ILO) on workers and students found that one in five employees lost their jobs, resulting in a decrease in students registering (ILO, 2020). Meanwhile, student funds are the main funds to finance operations, particularly IPHE, causing tension for IPHE. Secondly, existing research related to handling changes related to COVID-19 in HE has been more about changing learning methods (Camilleri *et al.*, 2021), and HE needs to handle more strategic changes, such as those related to leadership or change management. As stated by Keller *et al.* (2021), the COVID-19 pandemic is affecting personal and organizational life and has negative consequences on growing complexity and interconnectedness.

This study makes several contributions. Firstly, the findings enrich OCC research using paradox theory (Smith and Lewis, 2011) and social cognitive theory (Bandura, 1997) to investigate the influence of the leader's paradox mindset and collective psychology on OCC and organizational change performance. OCC and organizational performance are expected outcomes (Bandura, 1997). This study also contributes to empirical data on PsyCap, which is lacking on an organizational level because previous research has been on an individual level (Newman *et al.*, 2014). Secondly, this research contributes to existing research with multi-level (bottom-up) and multi-source analysis, examining individual-level processes in the emergence of OCC, known as the micro-foundations approach in dynamic capabilities (Salvato and Vassolo, 2018). The direct bottom-up effect is the main means through which collective phenomena emerge, through which individuals and collectives interact to create larger collective structures (Morgeson and Hofmann, 1999). Thirdly, this study enriches data from empirical reviews of OCC by including the context of the magnitude of change in the relationship between leader's paradox mindset and OCC.

Literature review and hypothesis development

Leader's paradox mindset and organizational change capability

According to Miron-Spektor *et al.* (2018), the leader's paradox mindset describes the extent to which a leader accepts and is encouraged by tension that may increase work performance and innovation. Leaders with this mindset are able to manage tensions in an organization calmly because they are used to seeing both sides of a contradiction as an intertwined coexistence rather than opposition (Zhang *et al.*, 2015), for example, between maintaining old capabilities and exploring new capabilities (Smith, 2014), control and collaboration (Sundaramurthy and Lewis, 2003), and between social and economic goal tensions, such as tensions that demand change in the era of the COVID-19 pandemic (Carmin *et al.*, 2021).

OCC includes learning capabilities, processes and contexts (Soparnot, 2011; Sukoco *et al.*, 2021; Supriharyanti and Sukoco, 2023). Organizational learning capability (OLC) refers to an organization's ability to absorb, transform and apply new knowledge. Leaders with a paradox mindset are capable of building organizational learning capabilities compared to those who do not have this mindset (Leung *et al.*, 2018). In reference to paradox theory (Smith and Lewis, 2011), the paradox mindset encourages leaders to juxtapose cognitively inconsistent elements, thereby broadening the scope of their attention and increasing the accessibility of knowledge related to the conflicting elements (Miron-Spektor *et al.*, 2011). The tension of contradiction provides avenues and learning opportunities to explore challenging problems at work (Lewis and Smith, 2014). Change process capability (CPC)

refers to an organization's "capability of implementing incessant change" and "a capability for leading and managing a cascading series of inter-related change initiatives that are consistent with an intended type of strategy dynamics" (Klarner *et al.*, 2007; Soparnot, 2011). Leaders with a paradox mindset are optimistic about being able to work through tension-filled situations. The leader will have a continuous impact on boosting resilience and positive states, enabling individuals to control tensions so that they are able to think clearly in terms of how to implement change that needs to be made (Yin, 2021).

Change context capability (CCC) describes the conditions of an organization that facilitate change (Soparnot, 2011). This condition is related to shared perceptions among organizational members regarding practices, procedures and behaviours that allow them to create, develop and realize new ideas useful in supporting change (Kang *et al.*, 2016). The contradictory conditions inherent in organizations give rise to new ideas and are referred to as "paradoxical innovations" (Miron-Spektor *et al.*, 2011). Leaders with a paradox mindset encourage idea generation through exploration, out-of-the-box thinking and fault tolerance, and idea implementation requires alliance support (Scott and Bruce, 1994). The more ideas that an organization's members generate, the more innovative solutions that they propose with for their organization. In summary, leaders with a paradox mindset drive a climate that supports change compared to leaders without this mindset. Therefore, the following hypothesis is presented:

H1. The leader's paradox mindset has a positive effect on OCC.

Collective PsyCap and organizational change capability

Collective, or team, PsyCap is defined as "a collective psychological state that is characterized by self-efficacy, hope, optimism, and resilience" (Heled *et al.*, 2016), meaning that each PsyCap component is examined collectively (Luthans and Youssef, 2007; Tho and Duc, 2020). Collective PsyCap is a psychological resource (Luthans and Youssef, 2007) and shared mental capacity (Heled *et al.*, 2016) required in facing change (Huy, 2011). Organizations with high PsyCap that have confidence in trying various paths to achieve goals (expectations) are more effectively able to learn from experience or external knowledge (Luthans and Youssef, 2007). Organizational members will appreciate one another's contribution of ideas and information and will be motivated to share their efficacy with one another. This process builds a team with absorptive capacity (Pletsch and Zonatto, 2018), which is part of OLC. In conclusion, when a team has a higher PsyCap, its OLC to change will be greater compared to an organization with lower PsyCap.

Collective PsyCap also has a positive relationship with team relationships, collaboration and cohesion, supporting communication processes within teams (West *et al.*, 2009). Therefore, organizations with high PsyCap ensure that organizational members more frequently experience positive emotional states, encouraging positive actions. An individual who works in an organization characterized by high PsyCap has high optimism and is encouraged to be more involved in solving organizational problems (Heled *et al.*, 2016). Confident organizational members also believe that they are able to meet their needs by participating in an organization (Toth *et al.*, 2019). Collective PsyCap drives behavioural change independently or supports established procedures without requiring supervision or control (Choi, 2020). When collective PsyCap is higher, the ability to process change is greater than organizations that have low PsyCap.

Organizational members share hopes and goals with one another, and organizations are expected to create a supportive environment to implement necessary changes (Amundsen and Martinsen, 2014). A supportive environment facilitates each team member having a goal-directed energy and the means to implement change successfully (Snyder *et al.*, 1991) through practices, procedures and behaviours that create, develop and realize ideas that are useful in supporting change (Kang *et al.*, 2016). When an organization has a higher

PsyCap, organizational context capability to change is greater than when a team has a lower PsyCap. Therefore, the following hypothesis is proposed:

H2. Collective PsyCap has a positive effect on OCC.

Organizational change capability and organizational change performance

Higher education management has now begun to shift from collegialism to managerialism. This shift has affected how performance is measured from a broader stakeholder perspective (Camilleri, 2020). Previous research on university performance has used indicators more closely related to the cost efficiency of teaching and research (Lu, 2012), patents and publications (Aghion *et al.*, 2010), teaching and research (Tee, 2016) and university ranking (Sukoco *et al.*, 2022). This study used the balanced scorecard (BSC) perspective, a strategy-based performance management system that allows HE to clarify their mission and vision (Camilleri, 2020). BSC has the potential to create value in higher education. BSC's key performance indicators and their integration into HE strategic planning aim to enhance the quality and status of universities in terms of:

- the delivery of customer-centric education;
- improving its research impact; and
- increasing outreach with stakeholders.

The ability to recognize the value of new information, assimilate it, and apply it to organizational goals, defined as absorption capacity, has a positive effect on performance (Kotabe *et al.*, 2017). In the context of the COVID-19 pandemic, HE with high learning capabilities were able to more quickly absorb knowledge from previous experience or external sources. These institutions will more easily respond to pressures due to the COVID-19 pandemic and immediately change the learning management system to online learning, explore various research related to it, carrying out activities to serve society affected by COVID-19 (Rana *et al.*, 2020). High CPC is characterized by leaders who encourage change with behaviours that include effective cooperation and coordination, high creativity, open communication, high commitment and interpersonal skills, involving others in the change process (Beer *et al.*, 1990). Sukoco *et al.* (2022) found that the influence of OCC affects HEI performance. A conducive organizational context, which consists of communication, participation and learning, represents an organization's ability to implement a knowledge sharing process (Rusly *et al.*, 2014). An organizational climate that facilitates change will result in employee behaviour that is also change-oriented, such as adaptive and innovative behaviour (Nguyen *et al.*, 2019). These organizations achieve change goals more quickly and efficiently and take advantage of or react to external or internal changes (Lawler and Worley, 2006). In the context of higher education, an innovative climate is reflected in the number of researches and publications produced, which, in turn, has an impact on improving organizational performance (accreditation, university rankings). Therefore, the following hypothesis is proposed:

H3. OCC has a positive effect on organizational performance. When OCC increases, organizational performance will increase.

The mediating effect of organizational change capability

OCC is a "meta capability" that enables organizations to remain competitive in a highly dynamic environment (Judge *et al.*, 2009). The leader's paradox mindset and collective PsyCap cannot directly affect organizational performance but are mediated by OCC. Widiyanto *et al.* (2021) found that the capability of managers, particularly in dealing with change, may affect organizational performance mediated by OCC. In the context of change due to disaster, Sadeghi *et al.* (2021) found that change management capability mediated

absorptive capacity and disaster immunity capability. OCC has been proposed as mediator based on social cognitive theory (Bandura, 1997).

Social cognitive theory posits that personal agency and social structure interact to influence human activity (Bandura, 1997). According to this theory, the simultaneous investigation of organizational variables and contextual factors is important in understanding OCC as a mediator. Social cognitive theory argues that cognitive, affective and environmental factors play a role in determining the interaction of human behaviour (Bandura, 1997). Leaders with a paradox mindset possess personal factors that influence the behaviour of organizational members so that OCC is formed. Leaders with cognitive abilities (i.e. clear vision) will produce appropriate strategies in the problem-solving process (Caughron *et al.*, 2013). Leaders with a paradox mindset do not think that a contradiction is a problem to be solved. Instead, tension of contradiction provides avenues and learning opportunities to explore challenging problems at work (Lewis and Smith, 2014). Cognitive styles of problem solving and decision-making will influence knowledge management (Jain and Jeppesen, 2013). In facing change, a leader's paradox mindset will have a positive impact on organizational performance if it has implications for organizational behaviour in handling change. Collective PsyCap is considered an important factor that determines human activity because it offers cognitive and affective resources for human adaptation and change. Collective PsyCap arises because of the existence of social contagion among organizational members and organizations with high PsyCap levels who use a wider repertoire of thinking actions to solve problems (Avey *et al.*, 2008). During change, collective PsyCap will have an impact on change performance if it produces positive behaviour in facing change-OCC. Therefore, the following hypotheses are proposed:

H4. The positive influence of leader's paradox mindset on organizational performance is mediated by OCC.

H5. The positive influence of collective PsyCap on organizational performance is mediated by OCC.

The moderating effect of magnitude to change

Higher education has undergone dynamic change, particularly over the last 30 years (Collins and Park, 2016). Teece *et al.* (1997) state that dynamic capabilities are only appropriate when an organization is in a highly dynamic environment. However, Eisenhardt and Martin (2000) argue that organizations operating in industries with low dynamics of change also require dynamic capabilities. Furthermore, Morgeson *et al.* (2015) states that the power of events (dynamics of change) affects organizational behaviour. This finding suggests that the external context affects OCC, which, in turn, may affect performance. Based on this assumption, this research discusses the role of magnitude of change as a condition of context (Bamberger, 2008).

Magnitude to change refers to the extent to which the impact of change is felt by members of an organization (Nohe and Michaelis, 2016; Groves, 2005). Specific leaders may handle contradictions in organizations calmly because they are used to seeing both sides of a contradiction as intertwined coexistence rather than opposition (Zhang *et al.*, 2015) because they have a paradox mindset of cognitive attitude towards contradiction (Sleesman, 2019). This study argues that the relationship between a leader's paradox mindset and OCC (H1) varies as a function of the magnitude of change. In conditions of significant change with tension, leaders with a paradox mindset do not consider that contradiction is a problem to be solved. Instead, these individuals may feel comfortable with the situation (Hargrave and Van de Ven, 2017; Lewis, 2000). Thus, the tension of contradiction provides opportunities to explore challenging problems at work (Eisenhardt and Westcott, 1988; Lewis and Smith, 2014). These leaders will seek avenues through experience or external learning, encouraging organizational members to engage in change

and anticipate further change. At the beginning of COVID-19, IPHE, which quickly felt the impact of the pandemic, would immediately try to make distance learning process effective, even before it was anticipated (Rana *et al.*, 2020). University leaders immediately communicate and encourage the lecturers' involvement ensure that they are ready to anticipate further change (Anthony, 2021). However, in organizations that feel a small impact, the positive influence of the leader's paradox mindset on OCC will be weaker. Therefore, the following hypothesis is proposed:

- H6. Magnitude to change moderates the positive relationship between the leader's paradox mindset and OCC, in that the relationship is stronger under high magnitude to change.

Research method

Participants and procedure

Data were collected from private universities in Indonesia (IPHE) using the snowball sampling technique to recruit participants from November 2020 to February 2021. In the first stage of this process, the researcher sent permission to the rector of each accredited A IPHE and sent an email containing a research questionnaire to the dean of each faculty. Some deans then forwarded this email to lecturers under their coordination, and other deans provided email references or contact numbers for lecturers. Because the chosen sample was insufficient, the researcher sent a second email and added an email from the IPHE website.

The current research uses a multi-source approach to avoid common method variance and empirical research problems (Podsakoff and Organ, 1986). The respondents targeted for this research were faculty leaders (deans and deputy deans, department heads, study program coordinators) and lecturers at 21 IPHE. The lecturer survey was conducted using a convenience sampling method of at least three lecturers per faculty. The survey of deans and deputy deans was designed to evaluate the leader's paradox mindset, OCC, organizational change performance and magnitude to change and provide demographic information, while the survey of lecturers assessed collective PsyCap and magnitude to change, as well as lecturer demographic information.

A total of 1,200 email questionnaires were distributed, of which 362 (30.17%) were completed and returned. Upon completion of the questionnaires, some members of the sample were excluded because researchers have suggested that the aggregation criteria in team research is no less than three responses (Kostopoulos *et al.*, 2013). As such, teams with less than three members were removed. A total of 48 teams comprised the remaining 327 responses.

The average number of respondents per team was 6.81. There was significant variation in terms of gender (50.20% female). Age ranges are as follows: under 40 years old (36.70%); between 41 and 50 years old (34.90%); between 51 and 60 years old (23.80%); and above 60 years old (4.60%). Participants with the longest working period (over 15 years) were 49.00%, and the shortest working period (<5 years) was 18.50%. In terms of academic positions, 40.90% of participants were junior lecturers, 36.30% were assistant professors, 20.30% were associate professors and 2.5% were professors.

Measurement

The measurement instruments included in the survey were established scales from previous studies or adapted from extant literature. The relevant items are reported in Table 1.

Individual level

Leader's paradox mindset was measured using the tool by Miron-Spektor *et al.* (2018). Participants adapted a five-point response scale, from 1: "very strongly disagree" to 5: "very

Table 1 Research items, factor loadings, composite reliability and AVE

No.	Item	Loading factor	Reliability	AVE
<i>Leader's paradox mindset (Miron-Spektor et al., 2018)</i>				
1	I am comfortable dealing with conflicting demands at the same time	0.687	0.909	0.568
2	Accepting contradictions is essential for my success	0.691		
3	Tension between ideas energizes me	0.794		
4	I enjoy it when I manage to pursue contradictory ideas	0.842		
5	I often experience myself as simultaneously embracing conflicting demands	0.617		
6	I am comfortable working on tasks that contradict one another	0.826		
7	I feel uplifted when I realize that two opposites can be true	0.825		
8	I feel energized when I manage to address contradictory issues	0.544		
<i>Collective psychological capital (Walumbwa et al., 2011)</i>				
Members of faculty...				
1	...confidently represent the faculty when dealing with others	0.679	0.894	0.585
2	...think of many ways to reach work goals	0.784		
3	...see themselves as successful at work	0.716		
4	... usually manage difficulties at work in various ways	0.801		
5	...are optimistic about what will happen to them in the future as it pertains to work	0.828		
6	... always look at the positive side of things related to their work	0.783		
<i>Organizational learning capability (Hsu and Fang, 2009)</i>				
My colleague...				
1	... has the ability to seek external information and knowledge in a patterned manner	0.761	0.930	0.655
2	... can routinely identify the use of external information and knowledge	0.744		
3	... routinely predicts the future development of the college	0.771		
4	... has a patterned ability to internally integrate various knowledge	0.894		
5	... consistently has the ability to apply knowledge to solve problems	0.867		
6	... has the ability to categorize knowledge effectively for future use	0.878		
7	... is effective in combining available and newly acquired knowledge to cope with a rapidly changing environment	0.757		
<i>Change process capability (Herold et al., 2008)</i>				
Regarding the specific changes that are happening (due to the Covid-19 pandemic), the college leader...				
1	... develops a clear vision of what this faculty wants to achieve	0.733	0.923	0.634
2	... explains from the start to the members of this organization why change is necessary	0.819		
3	... make a case about the urgency of this change before it is implemented	0.833		
4	... builds broad coalitions to support change	0.815		
5	... empowers people to implement change	0.810		
6	... carefully monitors and communicates the progress of implementing changes	0.837		
7	... gives personal attention to those who experience difficulties implementing change	0.715		
<i>Change context capability (van der Vegt et al., 2003; Kang et al., 2016)</i>				
My college...				
1	...generally rewards value achievements in innovation (systems, technology, etc.)	0.792	0.853	0.596
2	... in general, my faculty encourages all lecturers and employees to be flexible and continue to adapt to change	0.774		
3	... provides assistance in developing new ideas...	0.837		
4	... openly admits that it is innovative	0.717		
<i>Magnitude to change (Groves, 2005)</i>				
1	From the changes experienced today, what is the impact on the organization?	0.686	0.804	0.580
2	Compared to the changes that have occurred in the last three years, how are the current changes impacting the organization?	0.805		
<i>Organizational change performance (Camilleri, 2020)</i>				
Changes made by our university resulted in ... for the better				
1	Human resource competence	0.573	0.902	0.517
2	Learning management system (learning management system)	0.698		
3	Academic performance (in general)	0.665		
4	Research performance (scientific publications in reputable scientific journals)	0.776		
5	Community service performance	0.852		
6	Student study length	0.550		
7	Student achievement at national/international level	0.739		
8	Absorption of graduates to get a job	0.756		
9	An increase in the amount of funds generated outside of students	0.771		

Source: Created by authors

strongly agree” to report their paradox mindset as follows: “When I consider conflicting perspectives, I gain a more accurate understanding of an issue”. This measure’s composite reliability was 0.909.

Organizational level

Collective psychological capital of an organization or a collective psychological capital may be defined as a group’s psychological development as characterized by hope, efficacy, resilience and optimism (Bandura, 1997; Walumbwa *et al.*, 2011). Collective PsyCap was measured on a six-item scale (1: “very strongly disagree” to 6: “very strongly agree”) adapted from Walumbwa *et al.* (2011), who used eight items. However, only six items had a high loading factor but represented the HERO dimension of PsyCap. Composite reliability was 0.894.

OCC refers to repeatable, patterned choices and routines (Winter, 2003) that provide the ability to deliberately move from a present state to a desired future state (Harigopal, 2006) through learning, process and context (Klarner *et al.*, 2007). This variable was measured using three dimensions, namely, OLC, organizational CPC and organizational CCC, with a total of 20 items. Measurements used in the OCC variable were adopted from several different sources (Hsu and Fang, 2009; Herold *et al.*, 2008; van der Vegt *et al.*, 2003; Kang *et al.*, 2016). The total number of OCC questions originally totalled 20 items, but this number was purified to 18 items with seven items for OLC (learning capability), 7 items for CPC (process capability) and 4 items for CCC (context capability). All items were measured on a scale of five items ranging from 1: “strongly disagree” to 5: “strongly agree”. This study conceptualizes OCC from an organizational level.

OLC refers to organizations’ ability to absorb and change new knowledge and apply it to achieve a competitive advantage (Hsu and Fang, 2009), as measured by six items (composite reliability = 0.930), such as “My college has the ability to search for externally patterned information”. Composite reliability was 0.930.

CPC is defined as what leaders need to do (leaders’ abilities) to effectively implement a given change (Herold *et al.*, 2008), as measured by seven items ($\alpha = 0.92$). The sample item included “College leaders developed a clear vision for what was going to be achieved by our work unit”. Composite reliability was 0.923.

CCC is a climate that offers support for change. Referring to van der Vegt *et al.* (2003) and Kang *et al.* (2016), climate for change may be defined as a shared perception among organizational members regarding practices, procedures and behaviours that promote the creation, development and realization of new ideas useful in supporting change, as measured by four items ($\alpha = 0.85$). The sample item included “In general, my organization rewards achievement in R&D and technological innovation”. Composite reliability was 0.853.

Magnitude to change refers to the degree to which changes due to the COVID-19 pandemic have impacted the organization (Nohe and Michaelis, 2016). The question items were adapted from Groves (2005). Respondents were instructed to rank the policy changes made by the organization due to the COVID-19 pandemic from largest to smallest. The respondents were then asked the following question:

Q1. Compared to changes that have occurred over the last three years, how have the changes occurring today impacted the organization?

All items were measured on a scale of five items ranging from 1: “no impact” to 5: “very impactful”. Composite reliability was 0.804.

Organizational change performance was adapted from Camilleri (2020), who found that the BSC enabled IPHE leaders to consider financial and non-financial metrics through customer, internal, learning and innovation and financial perspectives. All items were measured on a

scale of five items ranging from 1: “strongly disagree” to 5: “strongly agree” to report leaders’ perceptions of the result of changes that have been made by IPHE measured by nine items, including human resources, governance, academic performance and improvement of the amount of funding outside students. Composite reliability was 0.902.

Data aggregation

This study conducted a group-level analysis using faculty as the unit of analysis. The variables were collected from two groups of respondents so as to avoid common method variances (Podsakoff and Organ, 1986). OCC and organizational change performance are an aggregation of data from surveys returned from the faculty leadership team, namely, the dean, vice dean and head of the study programme. Collective PsyCap is a collection of survey data filled in by lecturers, and magnitude to change is a collection of data from faculty leaders and lecturers. To assess the suitability of aggregated individual scores to the team level, three measures are generally used: ICC (1); ICC (2); and *Rwg* (Lebreton *et al.*, 2003). The calculation of each variable yielded as follows: Collective PsyCap (*Rwg* = 0.94; ICC₁ = 0.11; ICC₂ = 0.27); OLC (*Rwg* = 0.93; ICC₁ = 0.03; ICC₂ = 0.07); CPC (*Rwg* = 0.93; ICC₁ = 0.13; ICC₂ = 0.25); CCC (*Rwg* = 0.88; ICC₁ = 0.04; ICC₂ = 0.08); organizational change performance (*Rwg* = 0.92; ICC₁ = 0.24; ICC₂ = 0.41); and magnitude to change (*Rwg* = 0.89; ICC₁ = 0.39; ICC₂ = 0.79).

Control variables

Response demographic variables such as age, academic position and tenure were used as control variables.

Analytical strategy

The variables in this study were collected from various respondents to avoid common method variance (Podsakoff and Organ, 1986). The questions in the questionnaire were arranged randomly so as to avoid leading questions. A non-response bias test was also conducted (Armstrong and Overton, 1977) on early and late responses, the results of which showed no difference between the two response stages except for collective PsyCap.

A series of confirmatory factor analyses were conducted to examine the distinctiveness of the construct, and a series of confirmatory factor analyses were performed to examine the peculiarities of the constructs (Table 2). For the variables assessed by leaders (paradox mindset, OCC and organizational change performance), the fit of the single-factor model was compared to the hypothesized three-factor model. To ensure a favourable indicator-to-sample-size ratio (Chen *et al.*, 2007), five randomly created parcels were used as indicators for OCC. Item parcels produce latent variables that are more reliable than individual items (Little *et al.*, 2002) and may be useful when multiple items measure a single construct. Table 2

Table 2 Model fit results for confirmatory factor analyses

Model	χ^2/df	RMSEA	CFI	TLI	SRMR
M5: LPM, OLC, CPC, CCC, OCP	1,075.547	0.087	0.778	0.799	0.098
M4: LPM, +OLC, CPC, CCC, OCP	1,407.330	0.113	0.667	0.643	0.119
M3: LPM+ OLC, CPC+ CCC, OCP	1,422.458	0.114	0.663	0.640	0.118
M2: LPM, +OLC+ +CPC, CCC+ OCP	1,640.553	0.128	0.578	0.551	0.142
M1: LPM+, OLC+CPC+, CCC+ OCP	1,829.346	0.139	0.505	0.474	0.135

Notes: All χ^2 are significant at $p < 0.01$; LPM = leader’s paradox mindset; CP = collective PsyCap; MC = magnitude to change; OCC = organizational change capability; OCP = organizational change performance

Source: Created by authors

demonstrates that the hypothesized five-factor model (M5) fits the data and is significantly more effective than the single-factor to four-factor model.

Similarly, the discriminant validity of the variables was assessed by the lecturer (collective PsyCap and magnitude to change) by comparing the single factor model with the hypothesized two-factor model. The hypothesized two-factor model showed a more accurate fit to the data [$\chi^2(19) = 45.656$, comparative fit index (CFI) = 0.966, Tucker-Lewis index (TLI) = 0.950, root mean square error of approximation (RMSEA) = 0.089]. An alternative model in which collective PsyCap and magnitude to change were loaded into one factor fit the data significantly worse [$\Delta\chi^2(20) = 105.379$, CFI = 0.891, TLI = 0.848, RMSEA = 0.156]. Therefore, the results indicate that the measures used in this study captured different constructs.

Finally, because the objectives for which the effect of individual-level constructs on groups were examined were consistent with existing studies (Nohe and Michaelis, 2016; Mom *et al.*, 2019), multi-level structural equation modelling (MSEM; Preacher *et al.*, 2010) was used as the analytical tool. MSEM accommodates the multi-level nature of this study and the need to model top-down and bottom-up relationships (Preacher *et al.*, 2010). The MSEM model breaks down the variance of variables into a latent component within units (variance within teams) and latent component between units (variance between teams in Lüdtke *et al.* (2008)).

Results

Table 3 presents the mean, standard deviation and correlation of the variables. Given the multi-level nature of the data and the inclusion of bottom-up relationships in the multi-level model, hypotheses were tested using Mplus [Version 8.6 (Muthén and Muthén, 2012)] in three separate specifications in the same way as Mom *et al.* (2019). Firstly, to examine the bottom-up mediation model, a one-stage procedure was followed (Croon and van Veldhoven, 2007), estimating the unique contribution of the direct pathway. Specifically, the individual leader's paradox mindset was included as the independent variable, with OCC as the mediator and organizational change performance as dependent variable. Secondly, the mediating effect of collective PsyCap on OCC was examined and the significance of the mediation hypothesis assessed by testing the statistical significance of the indirect effects in the path analysis and associated confidence intervals (Preacher *et al.*, 2010). Thirdly, to examine the magnitude to change, the significance of the bottom-up moderating effect of leader's paradox mindset on OCC was tested.

The coefficient path analysis results are presented on Table 4 and Figure 1. H1 predicted that the leader's paradox mindset on an individual level would have a positive effect on

Table 3 Descriptive statistics and matrix correlations

Research variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1) LPM	3.573	0.756	0.568	0.003	0.002	0.103	0.124	0.057	0.040	0.003	0.096	0.009
2) CP	4.007	0.432	-0.052	0.585	0.044	0.018	0.042	0.022	0.002	0.002	0.060	0.031
3) MC	4.477	0.286	0.045	0.210**	0.580	0.045	0.05	0.136	0.000	0.06	0.003	0.018
4) OLC	4.163	0.454	0.321**	0.135	0.211**	0.655	0.576	0.493	0.396	0.010	0.004	0.001
5) CPC	4.177	0.479	0.352**	0.206*	0.224**	0.759**	0.634	0.588	0.349	0.032	0.006	0.000
6) CCC	4.345	0.476	0.238**	0.148*	0.369**	0.702**	0.767**	0.596	0.252	0.007	0.008	0.002
7) OCP	3.610	0.558	0.199**	-0.048	0.018	0.629**	0.591**	0.502**	0.517	0.062	0.053	0.158
8) Team size	6.222	1.906	-0.054	-0.043	0.245**	0.100	-0.179*	-0.086	-0.249**	n.a.	0.001	0.008
9) Acad-position	1.849	0.498	0.310**	-0.244**	-0.058	0.062	0.079	0.090	0.231**	-0.037	n.a.	0.465
10) Tenure	2.927	0.826	0.095	0.175*	-0.133	0.028	0.007	-0.047	0.397**	-0.088	0.682**	n.a.

Notes: LPM = leader's paradox mindset; CP = collective psychological capital; MC = magnitude to change; LC = Org. learning capability; PC = Org. process capability; CC = Org. context capability; OP = organizational performance. Values on the diagonal and bold-italicized are AVE. Values below the diagonal are inter-factor correlation. Value above the diagonal is square of the correlation value. *Correlation values are significant at $p < 0.05$; **correlation values are significant at $p < 0.01$; * $p < 0.05$ (statistically significant); ** $p < 0.01$ (statistically highly significant); *** $p < 0.001$ (statistically extremely significant)

Source: Created by authors

Table 4 Coefficient path

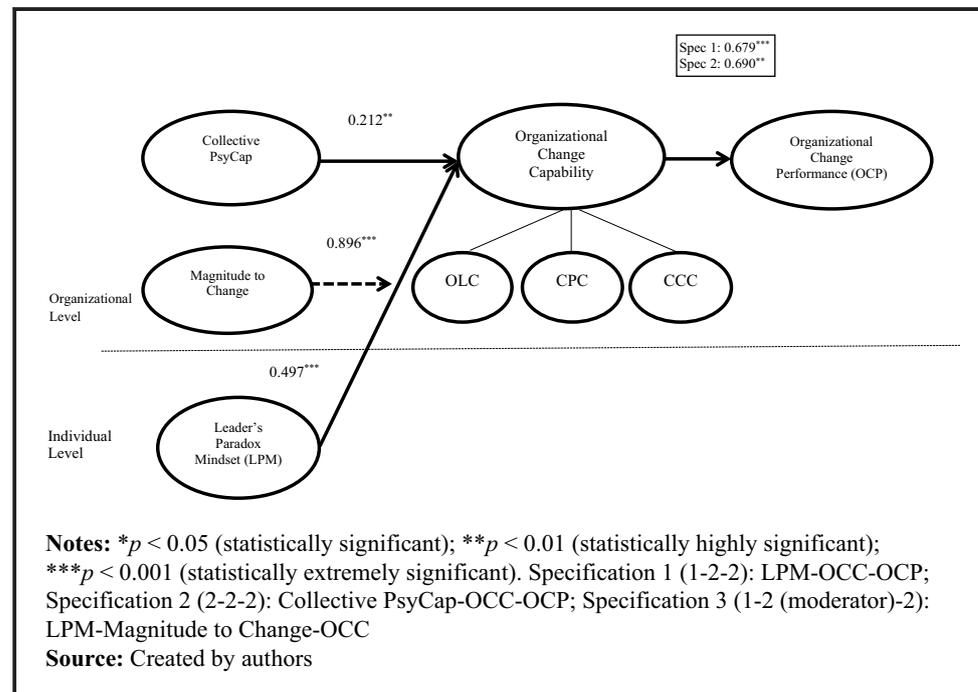
Path		Estimate ^a	ES	LLCI	ULCI
<i>Test of direct effect</i>					
Leader's paradox mindset → OCC	H1	0.497***	0.135	0.275	0.718
OCC → organizational change performance	H3	0.679***	0.135	0.457	0.900
Collective PsyCap → OCC	H2	0.212**	0.082	0.078	0.346
OCC → organizational change performance	H3	0.690**	0.047	0.612	0.768
<i>Test of indirect effect</i>					
Leader's paradox mindset → OCC → OP	H4	0.347**	0.125	0.141	0.553
Leader's paradox mindset → OP		-0.070	0.145	-0.308	0.168
Collective PsyCap → OCC → OP	H5	0.146**	0.059	0.049	0.243
Collective PsyCap → OP		-0.129**	0.057	-0.222	-0.036
<i>Test of interaction effect</i>					
Leader's paradox mindset* magnitude to change → OCC	H6	0.896***	0.069	0.783	1.009
<i>Control variable</i>					
Academic position → organizational change performance	-	-0.124/-0.168*/0.074**			
Tenure → organizational change performance	-	0.453***/0.470***/0.071**			
Team size → organizational change performance	-	0.088/-0.108*/0.055*			

Notes: * $p < 0.05$ (statistically significant); ** $p < 0.01$ (statistically highly significant); *** $p < 0.001$ (statistically extremely significant).

^aStandardized estimates are reported. LLCI = lower level of the 95% confidence interval; ULCI = upper level of the 95% confidence interval

Source: Created by authors

OCC (H1). The results of Model 1 with the bottom-up analysis show that the leader's paradox mindset significantly predicted OCC ($\beta = 0.497$, $p < 0.001$). Therefore, H1 is supported. H2 predicted a positive relationship between PsyCap collectively predicting OCC. The results suggest that collective PsyCap was positively related to OCC ($\beta = 0.212$, $p < 0.01$). Therefore, H2 is supported. H3 predicted a relationship between OCC and organizational change performance, which was tested with Models 1 and 2. In the multi-level analysis, the results show that OCC had an effect on organizational change

Figure 1 Research model and analysis results

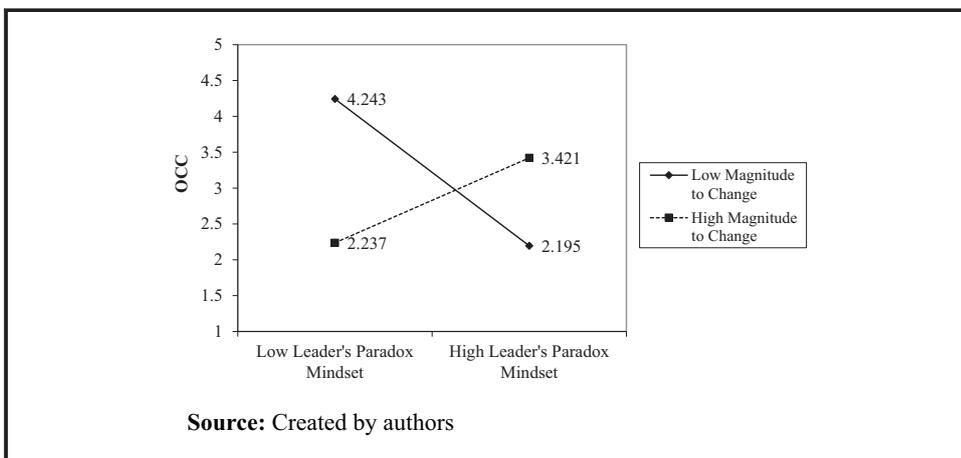
performance with $\beta = 0.679$ ($p < 0.001$). Meanwhile, in organizational-level testing on the effect of collective PsyCap and OCC on organizational change performance, it was found that OCC affected organizational change performance with $\beta = 0.690$ ($p < 0.01$). Therefore, *H3* is supported.

H4 predicted that the leader's paradox mindset at the individual level would indirectly affect organizational change performance through OCC. The results of the analysis show that the leader's paradox mindset does not directly affect organizational change performance ($\beta = -0.070$, *ns*). The indirect effect test also demonstrates that the leader's paradox mindset has a positive effect on organizational change performance mediated by OCC ($\beta = 0.347$, $p < 0.01$). These results support *H4*. The results of Model 2 show that OCC also mediated the relationship between collective PsyCap and organizational change performance ($\beta = 0.146$, $p < 0.01$). Collective PsyCap had a direct effect on organizational change performance ($\beta = -0.129$, $p < 0.01$).

H6 predicted that the positive relationship between the leader's paradox mindset and OCC is stronger when magnitude to change has a strong impact on the organization. This hypothesis was tested with Model 3. The interaction term between leader's paradox mindset and magnitude to change predicted OCC ($\beta = 0.896$, $p < 0.001$). These results support *H6*. Following the procedure of Aiken and West (1991), Figure 2 illustrates the moderating effect of magnitude to change. The influence of a leader's paradox mindset on OCC was strengthened when team members perceived a stronger magnitude to change. When magnitude to change was low, leaders with a lower paradox mindset had a higher OCC ($X = 4.243$) but were ineffective at developing OCC when they had a high paradox mindset ($X = 2.195$). In contrast, when magnitude to change was high, a lower leader's paradox mindset led to a lower OCC ($X = 2.237$) but became effective for developing OCC when the leader's paradox mindset was high ($X = 3.421$). Interestingly, there was no significant difference between leaders with a low paradox mindset under high magnitude to change ($X = 2.237$) and a high paradox mindset leader under low magnitude to change ($X = 2.195$). The interaction effect is presented on Figure 2.

Academic position, tenure of organizational members and team size were controlled for. The results show that academic position and team size presented different results in the three specification models. In Models 2 and 3, both control variables had a significant effect on organizational change performance. Furthermore, tenure had a significant effect on the organizational change performance, as evidenced in all specification models.

Figure 2 Moderating effect of magnitude to change



Discussion

This research examines the origins of individual-level OCC, examining bottom-up relationships between individual-level variables and OCC. Based on paradox theory (Smith and Lewis, 2011), this study examines whether a leader's paradox mindset is related to OCC- organizational level and magnitude to change as a moderator variable. Using SCT theory (Bandura, 1997), this research also confirms that OCC acts as a mediator between leader's paradox mindset, collective PsyCap and organizational change performance. In line with the proposed hypotheses, a bottom-up relationship was found between leader's paradox mindset and OCC consisting of OLC, CPC and CCC. This finding supports *H1*, which is in accordance with the findings of Miron-Spektor *et al.* (2011). The contradictory conditions inherent in organizations give rise to new ideas and are referred to as "paradoxical innovation". Leaders with a paradox mindset encourage idea generation through exploration, out-of-the-box thinking and fault tolerance (Scott and Bruce, 1994).

This research also found a significant positive relationship between collective PsyCap and OCC (*H2* supported). This finding supports those of other studies, such as Tho and Duc (2020), which found that team PsyCap influences team innovation. PsyCap is considered an important component of the study of organizational behaviour because of its ability to influence employee behaviour and attitudes in the workplace, which impact organizational performance. Collective PsyCap drives behaviour change independently or supports established procedures without requiring supervision or control (Choi, 2020).

H3, which predicted that OCC would have a positive effect on organizational performance, is supported. When organizational change capabilities increase, organizational performance will also increase. This finding is in accordance with some of those of Sukoco *et al.* (2021, 2022), specifically that CCC influences the organization. However, in their research, OLC and CPC are antecedents to CCC. However, Kotabe *et al.* (2017) state that the ability to recognize the value of new information, assimilate it and apply it to organizational goals, which is defined as OLC, has a positive effect on performance.

OCC was also found to play a mediating role in the relationship between the leader's paradox mindset and organizational change performance (*H4* is supported). The results of the mediation effect analysis show that the leader's paradox mindset has no direct effect on organizational change performance. These findings suggest that the leader's paradox mindset is an important leader ability that drives the development of OCC. Leaders with a paradox mindset tend to proactively accept contradictions, allowing organizations to acquire new skills and social resources to help them face change (Miron-Spektor *et al.*, 2018). In facing change, a leader's paradox mindset will have a positive impact on organizational performance if it has implications for organizational behaviour in trying to handle change. The results also show that OCC mediates the influence of collective PsyCap on organizational change performance (*H5* is supported). Interestingly, collective PsyCap negatively influences organizational change in direct relationships. Furthermore, collective PsyCap will have an impact on change performance if it produces positive behaviour in dealing with organizational change capabilities. This finding is in accordance with those of Rebelo *et al.* (2018), who found that team PsyCap influences performance through team learning.

Furthermore, this study found that magnitude to change had a positive moderating effect on the relationship between the leader's paradox mindset and OCC (*H6* is supported). If the magnitude to change is greater, then the influence of leader's paradox mindset on OCC will also be greater. This finding is in accordance with the opinion of Teece *et al.* (1997), who argue that dynamic capabilities are only appropriate if the organization is in a highly dynamic environment.

Theoretical implications

The results of this study have important theoretical implications. Firstly, this study contributes to OCC research that has used paradox theory approach (Smith and Lewis, 2011) and

social cognitive theory (Bandura, 1997). Extending the work of Chiu *et al.* (2006), this study integrated paradox and social cognitive theories to build an OCC development model and found that the leader's paradox mindset, which embraces the contradictions that arise in change, will have positive consequences for the organization (Miron-Spektor *et al.*, 2018) through the development of OCC. This research developed and tested hypotheses linking individual-level phenomena (leader's paradox mindset), environmental factors (collective psychology) and behaviour (OCC). Existing research (Ehrhart, 2004) has assumed that organizational factors were the main generators of OCC. Social cognitive theory argues that behaviour is, in part, shaped and controlled by a person's cognitions (e.g. expectations and beliefs), social networks (i.e. social systems) and the events in which an environment operates (Bandura, 1997). In the framework of this theory, this study found that the leader, as the strategic core of the organization, with a paradox mindset and support from the collective PsyCap, has an influence on OCC and organizational change performance. These findings demonstrate the central role of a leader or group of leaders in providing strategic leadership for the organization (Hambrick *et al.*, 2009), including managing change (Stouten and Rousseau, 2018).

Secondly, this research contributes to developing a model that describes the process of how individual levels may contribute to the emergence of OCC, as well as micro-foundations in dynamic capabilities (Salvato and Vassolo, 2018) using a multi-level bottom-up analysis. The emergence of OCC may be explained by the presence of leader's paradox mindset. Leaders, as "strategic core" individuals (Morgeson and Hofmann, 1999), accept tensions and reframe negative events to approach them as opportunities for growth and learning for an organization (Miron-Spektor and Erez, 2017) to create and build interactions (Morgeson *et al.*, 2015), so that there is an emergent direct bottom-up effect on collective behaviour in the face of change, namely, OCC. The findings of this study reveal that organizational factors, namely collective PsyCap, also contribute to the emergence of OCC. On a leader level, the OCC antecedent potential model may be extended to consider individual employee-level origins.

Thirdly, magnitude to change was included as a contextual condition that influences the leader's paradox mindset on OCC. Because different events have different strengths (Morgeson *et al.*, 2015), gaining a more comprehensive understanding of the impact of organizational change on organizations is important, both theoretically and practically. The results suggest that the relationship between the leader's paradox mindset and OCC strengthened when magnitude to change on the organization was higher than low. OCC may be appropriate when the organization is in a high-impact change environment (Teece *et al.*, 1997) but requires a leader able to embrace tensions that arise in change (Miron-Spektor *et al.*, 2018).

Practical implications

The findings of this research have key implications for practice. The results suggest that the leader's paradox mindset is a key lever in enhancing OCC, and that OCC is positively related to organizational change performance. To benefit from the positive effects of a leader's paradox mindset, organizations may use a number of strategies to promote leader abilities. For example, organizations may recruit leaders with a paradox mindset and consider a paradox mindset a prerequisite for candidates to be considered for promotion. These organizations may also use training programmes to promote paradoxical thinking.

In addition, this research emphasizes the importance of environmental context in building OCC, one of which is collective PsyCap. Organizations may provide training or coaching systems to members of organizations associated with PsyCap. If PsyCap appears in individual members of the organization, said organization may be able build a system of interactions that is able to create contagion, which, in turn, gives rise to collective PsyCap.

This research also addresses the magnitude of the change, and the results show that there is a relationship between the leader's paradox mindset and OCC, though the strength of the relationship depends on the magnitude to change. If the magnitude to change is low, the organization does not need leaders with a high paradox mindset. On the other hand, when magnitude to change is high, leaders with a high paradox mindset effectively oversee change. Organizations may rotate leaders based on the level of change that occurs. Organizations may also provide training for the development of a paradox mindset for leaders and prospective leaders to allow them to be ready when change occurs. Knight and Paroutis (2017) used a paradoxical approach to management education.

Limitations and future research

Despite its methodological strengths such as multi-source data and use of multi-level analysis, this study has a number of limitations that may highlight useful avenues for future research. For example, ranking leaders' paradox mindset, OCC and organizational change performance from the same source (the leader) may have created potential differences from the same source. Future research may use a multi-wave approach to reduce these concerns.

In addition, small samples may be problematic. Although the results of this study are encouraging, the study was based on a relatively small sample of teams (327 team members and 48 leaders) at a private university. Future research should address the issue of the long-term impact of change capabilities using longitudinal techniques. Future research may also need to consider additional moderating variables. For example, tension may moderate the relationship between leaders' paradoxical mindset and OCC.

Finally, a purposive sampling method was used to collect data from educational organizations, specifically IPHE. However, the findings may be generalized to other non-profit organizations, particularly in Asian countries. Similarly, the implications of the practices that have been suggested in human resource practices through recruitment and training may be implemented in other similar organizations.

Conclusion

This study analysed the impact of the leader's paradox mindset and collective PsyCap on OCC and organizational change performance with a moderating role in magnitude to change. This study was based on survey data collected from IPHE in Indonesia. The results suggest that the leader's paradox mindset plays an important role in handling change through the development of OCC. Furthermore, collective PsyCap appears to have had a significant influence on OCC. The moderating role of magnitude to change moderated the relationship between the leader's paradox mindset and OCC.

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Further reading

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