Middle Managers’ Cognitive Styles, Capacity for Change, and Organizational Performance

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Abstract
The last three decades have seen the public sector move from the traditional bureaucratic model to a modern one with better services, efficiency, and accountability. To succeed in making a change, public organizations must develop their capacity for change to improve performance. Middle managers have a central role in the change process, particularly their cognitive styles (knowing, planning, and creating). This study aims to analyze how middle managers’ cognitive style contributes to the organizational performance through organizational capacity for change (OCC). The study was conducted with 75 managers along with 238 subordinates from a public organization in Indonesia. The results revealed that the creating style and organizational performance are mediated by OCC. Only creating styles positively relate to OCC, while knowing and planning styles are not. This study extends prior studies on the link between cognitive style and organizational performance by introducing OCC as the mediator.

Keywords
middle manager, cognitive style, organization capacity for change, organization performance, economic impact, services innovation, and public organization

Introduction
The last three decades have seen the public sector move from the traditional bureaucratic model to a modern one with better services, efficiency, and accountability (Pollitt & Bouckaert, 2017), despite shrinking of the public budget (Ancarani et al., 2018, 2021). Consequently, implementing change management is a must for public organizations by having good governance and increasing the quality of public services (Fernandez & Rainey, 2006; Pollitt & Bouckaert, 2004). Implementing these changes are becoming challenges for public organizations (Isett et al., 2013), due to distinct attributes of public organizations make the organizational changes rather different to the private organizations (By & Macleod, 2008; McNulty & Ferlie, 2004). Public organizations are often assumed to have a relatively complex environment and have to deal with diverse stakeholders (Rainey, 2014).

Previous studies in public organizations mostly focused on changes at the sector or national level (e.g., Pollitt & Bouckaert, 2004). Further, the studies emphasized the content of change rather than the process how the organizational change is executed (Kuipers et al., 2014). Having dynamic capabilities is a prerequisite for successful organizational change (Teece et al., 1997) through the capacity for change—OCC (Meyer & Stensaker, 2006). Previous studies indicate that OCC enables organizations to change effective and efficiently (Čirjevskis, 2017) which improves their performance (Heckmann et al., 2016; Sukoco et al., 2021a). Further, OCC enables organizations to be proactive in responding to market opportunities (Judge & Elenkov, 2005). Few studies discuss OCC in the public organizations, and this study empirically tests whether it contributes to organizational performance.

Previous studies indicate that middle-level managers have significant role in organizational change and the degree of its success (Balogun, 2003). The middle-level managers have responsibility to serve as boundary spanners across multiple levels to implement organizational changes agenda smoothly (Kellermanns et al., 2011) and the ability to contribute to the organizational change strategies (Darkow, 2015). Not only in private organizations, but also in public organizations

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(Ancarani et al., 2021). According to Teece (2007), the cognition of top management (and managers) contributes to the development of organizational capacities for change. Previous studies indicate that cognitive styles among individuals determine organizational behavior (Armstrong et al., 2012a), become a major determinant of organizational practices (Hayes & Allinson, 1994) and thus performance (Armstrong et al., 2012b). Since the cognitive styles of middle managers are crucial, whether it directly contributes to the organizational performance or should it transform into OCC before affecting organizational performance is the next question that we would like to empirically test.

To respond the research question, we review the OCC and cognitive styles as one of the middle managers’ capabilities. Then we develop hypotheses to enrich the public organization’s context. Further, we discuss the research method. We also introduce the research context of our study, the public organization of a sub-unit of the Ministry of Finance in Indonesia. We distributed a survey among middle- and lower-level managers to avoid common method bias. In addition, we tested the developed hypotheses using the structural equation model (SEM) through PLS. Finally, we presented the findings and offered academic and managerial implications of this study.

There are several contributions of our study. First, Hodgkinson and Healey (2011) suggested that the biases and inertia-based forces that undermine the OCC have both emotional and cognitive roots. Thus, one may expect to see an equal attempt of studies focused on both sides. However, the study of the cognitive influence on OCC remains limited (Eggers & Kaplan, 2009) despite recent studies being conducted on the affective side by Huy and Zott (2018) and Netz et al. (2019). By using CoSi (Cognitive Style Indicator), we answer the call of Cools et al. (2011) and Armstrong et al. (2012a) to enrich the context and increase the usefulness of the indicator. Second, the important role of middle-level managers in organizational change, particularly in developing OCC is highlighted. The top management level is predominantly discussed by existing studies when investigating dynamic capabilities or OCC (Ambrosini & Altintas, 2019). The roles of middle-level managers, specifically their cognitive styles, on developing OCC in public organizations is underexplored, in which this study offers contributions. Third, we argue that OCC serves as a transforming mechanism for middle-level managers’ cognitive styles and organizational performance. Majority of existing studies have conducted in the profit organizations (e.g., Heckmann et al., 2016; Judge & Elenkov, 2005) and public organizations (Sukoco et al., 2021a; Zhao & Goodman, 2018).

**Literature Review**

**Organizational Capacity for Change**

Developing the capacity to adapt and innovate timely, or capacity to change, under environmental dynamism is the biggest challenge for organizations (e.g., Klarner et al., 2008). Although there is no agreement as reported by Heckmann et al. (2016), scholars agree on the organization’s capacity to continuously change successfully in a highly dynamic environment (Zhao & Goodman, 2018).

OCC has two perspectives: First, the mixture of managerial and organizational capabilities allows the organization respond adaptively and effectively to the changing environment (Judge & Douglas, 2009). This perspective is based on a resource-based view (Barney, 1991) and some scholars employed in the study (e.g., Heckmann et al., 2016; Judge et al., 2009) among others. The second perspective, based on dynamic capability perspective (Teece, 2007; Teece et al., 1997) depicts not only to learn and adapt its competencies in the changing environment, but also the ability to execute the changes (Soparnot, 2011). Further, reactive (by adapting existing competencies) and proactive (initiate or develop totally new competencies; Peng, 2019) are the approaches that the organization can use based on this approach. We focused on the second approach due to proactive and reactive that might be employed by the organization. In addition, we define OCC as the organizational ability to learn from an internal and external organization, implement it (processes), and eventually develop the conducive contexts (Soparnot, 2011) to achieve a more desired future state (Cha et al., 2015; Sukoco et al., 2021a), particularly in public organizations which deal with multiple stakeholders and divergent interests (Rainey, 2014).

**Middle managers’ cognitive styles.** The development of OCC requires a strategic direction from the top management of an organization (Hodgkinson & Healey, 2011). However, it is the middle managers that actually transform the top management’s direction into action (Helfat & Peteraf, 2015). As such, they absolutely have to understand the entire direction of the building of an organization-wide capacity for change set by the top managers and put into place by the necessary structure, people, and systems needed for the operational managers to develop the capacity for change (Floyd & Lane, 2000; Kor & Mesko, 2013). Therefore, the middle managers’ cognition largely determines the success of OCC development (Helfat & Peteraf, 2015; Kor & Mesko, 2013).

Managerial cognitive capabilities refer to “the capacity of an individual manager to perform one or more of the mental activities that comprise cognition” (Helfat & Peteraf, 2015, p. 835). Further, they argue that managerial capabilities are the microfoundations of organizational dynamic capabilities (in this case OCC), in which “the role of attention and perception in relation to sensing, the role of problem-solving and reasoning in relation to seizing, and the role of language and communication as well as social cognition in relation to reconfiguring” (p. 845). Cognitive styles represent the cognitive competencies required of organizational leaders (Sparrow & Hodgkinson, 2002). It refers to consistent individual diversities in how individuals perceive, think, learn, make solutions, make decisions, and develop relationships...
with others (Witkin et al., 1977). Another definition refers to individual preferences in perceiving and proceeding information in the organization (e.g., Hayes & Allinson, 1994; Hodgkinson & Sadler-Smith, 2003). Scholars have reported that individual diversities in cognitive styles influence perception, learning, creating solutions, taking decisions, and innovation in important ways (Hayes & Allinson, 1994; Kirton, 2003). Scholars have reported many cognitive style models (Hodgkinson & Sadler-Smith, 2003). One of the most promising is the Cognitive Style Indicator (CoSI) developed by Cools and Van den Broeck (2007), which consists of three types of managerial cognitive style: knowing, planning, and creating. It is also relevant in the context of organizational change that our study aims to answer. The three types of managerial cognitive style (knowing, planning, and creating) represent how individuals perceive, think, and take decisions regarding organizational change (Hayes & Allinson, 1994; Witkin et al., 1977). Managers with a knowing style see problems based on data and facts with their curiosity focused on the details of the problem. The “planning style” managers have a character that is structured, managed well, goals planned, and working environment controlled. Managers with the creating styles tend to be creative persons that are fond of experimenting and see problems as opportunities and challenges (Cools & Van den Broeck, 2007). Consistent with an orthogonal conceptualization of style (Hodgkinson & Sadler-Smith, 2003), everyone may have a different level on the three CoSI dimensions that reflect a flexible approach of style assessment (Miron et al., 2004).

**Hypothesis development.** Cools and Van den Broeck (2007) identified knowing style as part of an analytic-intuitive style, which primarily considers facts and data when making decisions. Individuals who have a high level of knowing style have strong analytical skills; prefer a logical and rational approach to processing the information; and take decisions based on facts and rational arguments (Cools et al., 2009; Cools & Van den Broeck, 2007). Further, they described the knowing style as liking complex problems if they can find a clear and rational solution, and, thus, prefer to interact with others in a straightforward and rational way. The knowing style is preferably linked with all dimensions of the organizational capability for change, particularly learning the problems and solutions, communicating it in a transparent way as part of the change process, and incrementally developing the trust among leaders and members as part of the change context (Sukoco et al., 2021a; Zhao & Goodman, 2018). Further, Kor and Mesko (2013) developed a new model requiring beliefs that can validate the reality of the data and facts as a basis for confidence in the decision to change strategy. A rational and logical decision would be followed by all of the employees in the organization so that the effect on incremental deployment is gradually exceeded (Zhao & Goodman, 2018). Since the knowing style managers make decisions based on the facts and data with clear and rational solutions, then the organizational performance also improves. Therefore,

\[ H_1: \text{Middle managers with a knowing style positively relate organizational (a) capacity for change and (b) performance.} \]

The planning style is characterized by the need for a rigid structure (Cools & Van den Broeck, 2007). Individuals who have a high level of planning are attracted by structure; search for certainty; prefer well-organized environments; make decisions in a structured way; and are concerned with efficiency in decision-making (Cools et al., 2009; Cools & Van den Broeck, 2007). Planners prefer to organize a well-structured work environment due to their dependency on preparation and planning to reach their goals. The planning style applies the changes in a structured way to promote systematic and systematic learning in an organization (Zhao & Goodman, 2018) and also involves employees with an open and ongoing communication style, discussing the challenges, outcomes, and actions taken to impact the creation of transparency (Klarner et al., 2008; Soparnot, 2011). Planners tend to resolve every problem as soon as possible with collectively built change processes (Zhao & Goodman, 2018). Planners also mostly prefer to solve conflicts through an open discussion while gathering information through the collective learning methods (Hayes & Allinson 1998) and prefer incremental developments for change (Zhao & Goodman, 2018). By doing that, the changing context is conducive to facilitating organizational change. Managers with planning styles tend to solve the problems systematically based on a rigorous plan, thus the targeted performance might be achieved. Therefore,

\[ H_2: \text{Middle managers with a planning style positively relate to organizational (a) capacity for change and (b) performance.} \]

People with a creating style tend to be more creative and enjoy experimentation (Cools & Van den Broeck, 2007). Individuals who have a high level of creating search for renewal, prefer ingenious and unorthodox ways of judgment, and take decisions based on intuition (Cools et al., 2009; Cools & Van den Broeck, 2007). They consider problems to be challenge that can allow them to grow, and individual with a creating style have a strong originality and are good at developing creative ways (Cools & Van den Broeck, 2007). Creating styles affect the OCC through creative ways of solving problems. In addition, creative solutions will form open communication (Cools & Van den Broeck, 2007) and have a sustained impact on the collectively built change process to solve problems and learn collectively (Zhao & Goodman, 2018). In other words, creating style contributes to the development of organizational capacity for change.
addition, due to many possibilities and creative solutions provided by the creating styles, the improvement of organizational performance is achieved.

**H₃:** Middle managers with a creating style positively relate to organizational (a) capacity for change and (b) performance.

Studies showed that OCC has a positive relationship with organizational performance (Judge & Douglas, 1998; Judge et al., 1996; Zhao & Goodman, 2018). According to Heckmann et al. (2016), there are at least three reasons why OCC influences organizational performance. First of all, OCC becomes the basis of continuous change and reflects the adaptability in the organization (Heckmann et al., 2016). Secondly, OCC raises the reactive and anticipatory character of the organization in response to the changes within the organization and its environment (Heckmann et al., 2016) to sustain a positive performance in today’s business environment (Klarner et al., 2008). Lastly, OCC is the source of mandatory new capabilities (Heckmann et al., 2016). Organizations can secure their competitive position in their respective industries.

OCC has three dimensions: learning, process, and context (Klarner et al., 2007, 2008; Soparnot, 2011; Zhao & Goodman, 2018). Learning refers to the ability of an organization to acquire information and knowledge continuously on improving their capability (Zhao & Goodman, 2018). By learning, it enables the organizations to facilitate and articulate the change initiatives (Klarner et al., 2008) and develop change strategies that allows the organization to sustain their competitive advantage (Calantone et al., 2002; Sukoco et al., 2021a).

Change process requires transparency (Zhao & Goodman, 2018) so that information related with organizational changes can be understood by every member of the organization (Klarner et al., 2008). Having transparency makes organizational members have a better understanding of the change objectives, programs, and milestones that need to be achieved (By, 2007). Moreover, information and knowledge exchange require a specific forum so that the organizational members can then interpret and assimilate the change initiatives and programs properly (Klarner et al., 2008). By doing so, the organizational members will have similar frequency on the urgency of change and develop the collective ambition of change (Woodward & Hendry, 2004), develop agreement, and then improve their contribution of any change programs (Kellermanns et al., 2011).

The organizational context has many parts, and one of them is trust (Zhao & Goodman, 2018), which refers to the perception among the organizational members that they have confidence on their leaders (Schoorman et al., 2007). It is often referred to the process of exchanges between the leaders and their members (Dirks & Ferrin, 2002). Further, they described those leaders who behave justice and who support their members will be seen as “trustworthy.” Moreover, when the members feel that they have been treated in justice, they will fully support to their leaders and their organization (Cobb et al., 1995). Consequently, the commitment of organizational members on change strategy and change programs will easily be generated when there is trust between the leaders and members (Kraft et al., 2018). When the members trust their leader, they will support the change policies and contribute to the change programs (Herold et al., 2008; Heyden et al., 2017) and thus, it improves the performance of organization (Kontoghiorghes et al., 2005).

**H₄:** Organizational capacity for change (OCC) positively relates to organizational performance (OP).

We propose that the OCC will mediate the cognitive style on organizational performance. The middle managers’ cognitive style influences perception, problem solving, learning, communication, decision-making, and creativity in important ways (Rouleau & Balogun, 2011). Moreover, the middle managers’ cognition style stimulates initiative and creativity (Kirton, 1994). This initiative and creativity will lead to new business models and new products on responding consumers’ and customers’ needs (Zhao & Goodman, 2018) and thus, it will become the major contributor of organizational performance (Mone et al., 1998).

When the managers with capability (in this case, managerial cognitive style) work collectively, they will contribute to the development of the organization’s capacity to change (Tabrizi, 2014; Sukoco et al., 2021b). The OCC enables the organizations to transform individual capabilities of middle-level managers into performance (Judge & Elenkov, 2005; Widianto et al., 2021). When the organization can learn, able to accommodate the change process effectively and efficiently, and the organizational context for change is better (Soparnot, 2011, Sukoco et al., 2021b), then, it enables the organizations to transform the capabilities of middle managers into organizational performance.

To have better organizational performance, the organizations should develop its response (Hurley et al., 2005), consequently, the organizational capabilities have to be transformed into the OCC (Widianto et al., 2021). The study of Klarner et al. (2008) exhibits that the managerial capabilities (in this case, managerial cognitive style) must be able to transform into OCC so that organizational changes improve organizational performance. In summary, this study argues that cognitive style of middle managers per se may not directly influence organizational performance, unless it transforms into OCC then organizational performance will improve. Therefore,

**H₅:** Organizational capacity for change (OCC) will mediate the positive effect of the managers’ cognition styles: (a) knowing style, (b) planning style, and (c) creating style, on organizational performance (OP).
Research Method

Sampling Plan

To test the developed hypotheses, we conducted surveys among middle- and lower-level managers across the different work units from the Directorate General of State Asset (DGSA), Ministry of Finance (MOF) in Indonesia. The directorate has the task of carrying out the formulation and implementation of policies in the field of state property, separated state assets, other state assets, valuation, state receivables, and auctions in accordance with statutory regulations. As one of the ministries in Indonesia, the MOF has been assigned to implement bureaucratic reforms to increase public expectations and satisfactions in effective and efficient ways. As the agent of change, the middle managers play a key role in the bureaucratic reforms process and improving the organizational performance. As one of the directorates in MOF, DGSA assigned and expanded the roles in the last three decades. Originally it managed the state receivables, then, in 1991, expanded the role into managing the auctions of state assets. In 2001, it expanded as state treasures, and finally, in 2006, took on an additional role to manage the state assets. In 2019, there were $747 billion of state assets under the management of DGSA. Based on that, the growing roles of DGSA require leaders and managers to develop organization capacity for change to support bureaucratic reform.

In this study, middle-level managers are the leaders of regional units who have responsibility to supervise their direct lower-level managers and report to the executive managers. They implement the decisions taken by executive managers, provide problem solving in the office and input as a basis for the decision-making of the executive managers. Further, they are officially assigned as the “agents of change” of the bureaucratic reform programs based on the regulation of the Ministry of Administrative and Bureaucratic Reform of the Republic of Indonesia NO. 27 year 2014.

We used simple random and purposive sampling method. The address of each manager (middle- and lower-level) was obtained from the human resource department of DGSA. We randomly selected respondents (the middle-level manager or the leader) who had had spent at least 1 year in their current managerial position on a voluntary basis. Then we invited four members (subordinates) of each work unit where the leader responded voluntarily. To minimize the common method bias, we followed the suggestions of Podsakoff et al. (2003). First, we surveyed the respondents anonymously to allow them to truthfully answer the survey. A unique code was generated by the survey system (Baruch & Holtom, 2008). Second, we used measurements from different sources (i.e. managers’ cognitive styles were measured by the subordinates, while the OCC and organizational performance were measured by the middle-level manager) to minimize the threat of common method bias (Podsakoff et al., 2012). Fourth, we used Harman’s single factor test to determine that no single factor explains the majority of the variance (Podsakoff & Organ, 1986). Based on that, we believe that common method bias is not a problem in our study.

Questionnaire Design

This study adapted the measurement items for the cognitive leadership styles from Cools and Van den Broeck (2007), in which knowing style consists of four items, planning style consists of seven items, and creating style consists of seven items. In the case of OCC, we operationalized it based on the items developed by Zhao and Goodman (2018). Learning capacity has four items, process capacity has four items and context capacity consists of eight items. Finally, for organizational performance, we modified the items from Zhang et al. (2016), and this instrument consists of four items. Before we distributed the questionnaire, we discussed with 1 professor and 10 PhD students about the operational definitions and measurement items. All of the items were rated on a 5-point Likert scale from 1—strongly disagree to 5—strongly agree (Table 1).

The survey was distributed to 80 middle-level managers and 250 immediate subordinates from 71 offices in Indonesia. The survey material included a university-headed cover letter from the researcher. For each middle-level manager, two to four lower-level managers responded to the survey. Each questionnaire was coded to know who the middle manager’s subordinate was. The survey was carried out between April and November 2018. There were 75 managers participated in the survey (a response rate of 93.75%) and 238 subordinates responded (a response rate of 95.20%). They represented all the DGSA offices in Indonesia.

Respondents’ Description

Table 2 shows the profile of the respondents of this study. All of the institution’s operational areas are represented equally. Of the total respondents, 24% are middle managers while the rest (76%) are low-level managers. Most of the respondents were in an operational office (57%) and they directly serve the stakeholders and run the head office policy. Most of the respondents working in DGSA are over 20 years (59%) and the position of echelon had been held for less than 10 years (75%). The average current tenure is less than 2 years (52%).

Analysis

The data were aggregated by calculating the arithmetic mean to achieve homogeneity in the data between the middle- and lower-level managers. The reflective indicators of all constructs were measured following Kleijnen et al.’s (2007) procedure. Reliability testing used the composite scale average reliability (CR) and average-rata variance
### Table 1. Questionnaire Items, Validity, and Reliability Results.

| Code | Items                                                                 | Outer loadings | Composite Reliability | AVE  |
|------|----------------------------------------------------------------------|----------------|-----------------------|------|
|      | **Leadership styles—Knowing styles (KS)**                           |                |                       |      |
| KS1  | My direct supervisor wants to have a full understanding of all problems | 0.809          | .913                  | 0.728 |
| KS2  | My direct supervisor wants to like to analyze problems               | 0.888          |                       |      |
| KS3  | My direct supervisor likes to make detailed analyses                 | 0.897          |                       |      |
| KS4  | My direct supervisor likes to study each problem until I understand the underlying logic | 0.807          |                       |      |
|      | **Leadership styles—Planning styles (PS)**                          |                |                       |      |
| PS1  | My direct supervisor likes to Developing a clear plan is very important to him/her | 0.873          | .946                  | 0.714 |
| PS2  | My direct supervisor always want to know what should be done when    | 0.828          |                       |      |
| PS3  | My direct supervisor likes detailed action plans                     | 0.877          |                       |      |
| PS4  | My direct supervisor prefers clear structures to do my job           | 0.793          |                       |      |
| PS5  | My direct supervisor prefers well-prepared meetings with a clear agenda and strict time management | 0.767          |                       |      |
| PS6  | My direct supervisor makes definite engagements, and I follow up meticulously | 0.901          |                       |      |
| PS7  | My direct supervisor sure about a good task is a wellprepared task   | 0.866          |                       |      |
|      | **Leadership styles—Creating styles (CS)**                           |                |                       |      |
| CS1  | My direct supervisor likes to contribute to innovative solutions     | 0.921          | .948                  | 0.726 |
| CS2  | My direct supervisor prefers to find creative solutions              | 0.909          |                       |      |
| CS3  | My direct supervisor is motivated by continuous innovation           | 0.945          |                       |      |
| CS4  | My direct supervisor likes a lot of variety in his life              | 0.763          |                       |      |
| CS5  | My direct supervisor’s new ideas exceeded the solutions              | 0.868          |                       |      |
| CS6  | My direct supervisor like to add insight                             | 0.899          |                       |      |
| CS7  | My direct supervisor try to avoid the routine                        | 0.601          |                       |      |
|      | **Organizational capacity for changes—Learning capacity (LeCap)**    |                |                       |      |
| LeCap1| Change leaders know the interdependency between work units in change | 0.884          | .944                  | 0.809 |
| LeCap2| Change leaders know the importance of institutionalizing change       | 0.900          |                       |      |
| LeCap3| Change leaders know the need to readjust incentives with desired changes | 0.887          |                       |      |
| LeCap4| Change leaders know to assess causes and not symptoms of problems   | 0.926          |                       |      |
|      | **Organizational capacity for changes—Process capacity (ProCap)**    |                |                       |      |
| ProCap1| The information flow is effective from the Director General to Echelon II, III, and IV Officials in all work units | 0.866          | .946                  | 0.813 |
| ProCap2| Information flow is effective, the information provided is always real time | 0.924          |                       |      |
| ProCap3| Information flow is effective; information provided across work units | 0.937          |                       |      |
| ProCap4| The information flow is effective; information provided from stakeholders to work units | 0.877          |                       |      |
|      | **Organizational capacity for changes—Context capacity (ConCap)**     |                |                       |      |
| ConCap1| DJKN employees open themselves to consider changes to RBTK            | 0.839          | .944                  | 0.682 |
| ConCap2| DJKN employees have the opportunity to voice their concerns about change | 0.913          |                       |      |
| ConCap3| DJKN employees know how changes will help the DJKN’s performance as a whole | 0.924          |                       |      |
| ConCap4| DJKN employees see the DJKN head office as trustworthy               | 0.832          |                       |      |
| ConCap5| DJKN has an organizational culture in providing value to innovation and change | 0.802          |                       |      |
| ConCap6| DJKN has an organizational culture in attracting and retaining creative people | 0.774          |                       |      |
| ConCap7| DJKN has an organizational culture in providing resources to experiment with new ideas | 0.712          |                       |      |
| ConCap8| DJKN has an organizational culture that allows people to take risks and sometimes fail | 0.787          |                       |      |
|      | **Organizational performance (OP)**                                   |                |                       |      |
| OP1  | The asset utilization ratio to total assets increase                   | 0.805          | .906                  | 0.707 |
| OP2  | Percentage of realization of the value of economic benefits of managing state wealth increases | 0.898          |                       |      |
| OP3  | The level of work fulfillment units toward the Corruption-Free Region Integrity Zone is increasing | 0.780          |                       |      |
| OP4  | The percentage of information system implementation that supports business processes increases | 0.868          |                       |      |
extracted (AVE; Chin & Marcoulides, 1998; Fornell & Larcker, 1981a,b) to evaluate the relationship of the null estimation model. The results of the reliability testing should provide CR values that are above .700 and an A VE above 0.500 (Fornell & Larcker, 1981a,b). Convergent validity was assessed by looking at the A VE value (Chin, 1998) and the results should be more than 0.500. In summary, reliability and validity surpassed the criteria (Table 3).

This research used Structural Equation Modeling using Smart Partial Least Squares (PLS) 3.0 (Chin, 1998) to measure the research data criteria and to test the hypotheses. Furthermore, the path coefficient generated for the selected sub-sample and $t$-statistics was identified for all of the coefficients to indicate which paths are statistically significant.

### Hypotheses Testing

Hypothesis 1 predicts that middle managers with a knowing style has a positive effect on OCC and OP. As exhibited in Figure 1, the results indicate that the knowing style of the middle managers does not significantly influence OCC ($\beta = -0.126, p = .300$) and OP ($\beta = 0.076, p = .500$). Therefore, $H_1$ is not supported. Hypothesis 2 posits that middle managers with a planning style positively influence OCC and OP.

### Table 2. Respondents’ Profile.

| Category               | Criteria | Middle manager |   |   | Lower manager |   |   |
|------------------------|----------|----------------|---|---|----------------|---|---|
|                        |          | Frequency %    |   |   | Frequency %    |   |   |
| Gender                 | Male     | 64 85          |   |   | 194 82         |   |   |
|                        | Female   | 11 15          |   |   | 44 18          |   |   |
| Total                  |          | 75 100         |   |   | 238 100        |   |   |
| Age                    | Less than 30 years | —        |   |   | 1 0            |   |   |
|                        | 30–40 years | —        |   |   | 55 23          |   |   |
|                        | 41–45 years | 22 29         |   |   | 156 66         |   |   |
|                        | 46–50 years | 22 29         |   |   | 14 6           |   |   |
|                        | Above 50 years | 31 42         |   |   | 12 5           |   |   |
| Total                  |          | 75 100         |   |   | 238 100        |   |   |
| Unit echelon III       | Division | 32 43          |   |   | 79 33          |   |   |
|                        | Operational office | 43 57         |   |   | 159 67         |   |   |
| Total                  |          | 75 100         |   |   | 238 100        |   |   |
| Title                  | Bachelor degree | 20 27          |   |   | 121 51         |   |   |
|                        | Master degree | 54 72          |   |   | 116 49         |   |   |
|                        | Post graduate degree | 1 1          |   |   | 1 0            |   |   |
| Total                  |          | 75 100         |   |   | 238 100        |   |   |
| Zone                   | I        | 15 20          |   |   | 56 24          |   |   |
|                        | II       | 21 28          |   |   | 56 24          |   |   |
|                        | III      | 18 24          |   |   | 66 27          |   |   |
|                        | IV       | 21 28          |   |   | 60 25          |   |   |
| Total                  |          | 75 100         |   |   | 238 100        |   |   |
| Work length            | Less than 5 years | —        |   |   | 2 1            |   |   |
|                        | 5–10 years | 2 2            |   |   | 17 7           |   |   |
|                        | 11–15 years | 11 15          |   |   | 34 14          |   |   |
|                        | 16–20 years | 18 24          |   |   | 94 39          |   |   |
|                        | More than 20 years | 44 59          |   |   | 91 38          |   |   |
| Total                  |          | 75 100         |   |   | 238 100        |   |   |
| Length of echelon experience | Less than 10 years | 56 75          |   |   | 160 61         |   |   |
|                        | 10–15 years | 13 17          |   |   | 65 27          |   |   |
|                        | 16–20 years | 6 8            |   |   | 11 5           |   |   |
|                        | More than 20 years | —        |   |   | 2 1            |   |   |
| Total                  |          | 75 100         |   |   | 238 100        |   |   |
| Length of current position | Less than 2 years | 52 69          |   |   | 113 47         |   |   |
|                        | 2–4 years | 21 29          |   |   | 107 45         |   |   |
|                        | 5–6 tahun | 2 2            |   |   | 16 7           |   |   |
|                        | More than 6 years | —        |   |   | 2 1            |   |   |
| Total                  |          | 75 100         |   |   | 238 100        |   |   |
The results indicate that the planning style of the middle managers insignificantly influence OCC ($\beta = .266, p = .103$) and OP ($\beta = -.253, p = .073$), thus $H_2$ is also not confirmed. Hypothesis 3 posits that middle managers with a creating style positively influence OCC and OP. The results indicate that the creating style of middle managers positively influences OCC ($\beta = .688, p = .000$) but insignificantly influences OP ($\beta = .202, p = .155$). Thus, $H_3$ is partially confirmed. Further, Hypothesis 4 posits that OCC has a positive effect OP. The results exhibit that the OCC has a positive and significant effect on OP ($\beta = .802, p = .000$). Thus, $H_4$ is supported.

The mediation hypotheses ($H_{5a-c}$) were tested following the procedure of Hayes et al. (2011) and are presented in Table 4. The application of bootstrapping allows the mediation hypotheses to be tested (Preacher & Hayes, 2008). In the analysis, 2,000 resamples were generated to provide 95% confidence intervals (percentile) for the mediators. Table 4 shows the total effects of KLS ($\beta = -.025, t = .161$), PLS ($\beta = -.040, t = .201$), and CLS ($\beta = .753, t = 4.911$) on
organizational performance. When adding the mediators (OCC), three leadership styles have no significant direct effects on organizational performance. Interestingly, OCC indicates fully mediating the effect of CLS on organizational performance ($\beta = .552, t = 4.393$) and supports H5c.

**Discussion**

The results show that all of the middle managers’ cognitive styles have a positive correlation with OCC. However, only the creating style has a significant correlation with OCC. This suggests that OCC is realized through the middle managers’ creating actions. OCC does not only require an analytical or planning action, it also requires a concrete action from the middle managers. In addition, the cognitive style does not affect organizational performance directly. It is mediated by OCC, particularly from creating cognitive style. This suggests that the organization needs to use its managers’ cognitive style to develop organizational capacity for change, particularly creating cognitive style. However, mainly managers’ cognitive style per se might not directly influence organizational performance, but it should transform it into organizational capacity for change.

The results seem applicable for most public organizations, which are characterized by a large gap in knowledge between each level of management in the organization (Angiola & Bianchi, 2015). In addition, it is commonly understood that finding reliable data is quite hard in developing countries. Therefore, using the knowing style to develop OCC will not be effective. In the context of DGSA, a knowledge gap was found between the middle and low-level management due to the work experience gap between the two. Most of the middle managers had been working for more than 20 years, while the low-level managers are considered less experienced, such as being an officer who has recently been promoted. Naturally, this causes there to be a gap where the top manager has a fuller understanding of the problem. In terms of knowledge management practices, the study by Jain and Jeppesen (2013) which employed Kirton’s Adaptor-Innovator styles (KAI—Kirton, 1999) in a public sector organization is appropriate. They found that adaptor cognitive style (rather than innovator cognitive style) had a positive impact on knowledge management practices in the public organizations.

In the case of organizational change, which this study examines, planning cognitive style will not be effective either. Public organizations have the burden of following strict regulations, procedures, and bureaucracy. This set of planning strategy rigidity leads to the low number of empirical assessments of the influence of planning processes on organizational performance in the public sector in general (Haberman & King, 2011). The rigidity of strategic planning limits the middle-level managers to perform various activities, even they are willing to (Elliott et al., 2019). Middle-level managers various activities could also become strategic role conflict (Floyd & Lane, 2000). As a result, there is only a marginal contribution from the middle-level managers in developing the organization’s capacity for change. The planning structure enforced by the government and the role ambiguity originating from organizational change also constrains

**Table 4. Summary of Mediating Effects.**

| Constructs | Estimates | SE | t-Value | 95% bias corrected confidence interval | 95% percentile confidence interval |
|------------|-----------|----|---------|---------------------------------------|-----------------------------------|
|            |           |    |         | Lower | Upper | Lower | Upper |
| Total effects |          |    |         |       |       |       |       |
| KCS→OP | −0.025 | 0.154 | 0.161 | −0.350 | 0.239 | −0.363 | 0.229 |
| PCS→OP | −0.040 | 0.200 | 0.201 | −0.309 | 0.443 | −0.370 | 0.379 |
| CCS→OP | 0.753 | 0.153 | 4.911*** | 0.332 | 0.925 | 0.403 | 0.933 |
| OCC→OP | 0.802 | 0.115 | 6.980*** | 0.565 | 1.021 | 0.547 | 1.013 |
| Direct effects |          |    |         |       |       |       |       |
| KCS→OP | 0.076 | 0.113 | 0.675 | −0.167 | 0.280 | −0.159 | 0.286 |
| PCS→OP | −0.253 | 0.141 | 1.795* | −0.475 | 0.092 | −0.018 | 0.583 |
| CCS→OP | 0.202 | 0.142 | 1.423 | −0.142 | 0.443 | −0.046 | 0.477 |
| OCC→OP | 0.802 | 0.115 | 6.980*** | 0.565 | 1.021 | 0.547 | 1.013 |
| Indirect effects |          |    |         |       |       |       |       |
| KCS→OCC→OP | −0.101 | 0.099 | 1.021 | −0.287 | 0.088 | −0.292 | 0.082 |
| PCS→OCC→OP | 0.213 | 0.138 | 1.598 | 0.002 | 0.536 | −0.013 | 0.500 |
| CCS→OCC→OP | 0.552 | 0.126 | 4.393*** | 0.291 | 0.760 | 0.324 | 0.786 |

Note. The 95% confidence intervals are constructed using 2,000 bootstrap samples. KCS=knowing cognitive styles; PCS=planning cognitive styles; CCS=creating cognitive styles; OCC=organizational capacity for change; OP=organizational performance.

***p < .001. *p < .10.
the middle-level managers to perform strategic activities (Currie & Procter, 2005) which eventually affects organizational performance. In the context of DGSA, the organization must first set and discuss any plan in the official meetings at a certain level, ranging from the level of the Ministries, Directorate General, and regional offices through to the appropriate sections of the respective operational offices. If there are obstacles and constraints, they are returned to the head office level to be re-discussed. This bureaucracy procedure slows down the change process within a public organization. Hence managers who use the planning style cannot effectively induce OCC.

The last resort when developing OCC in a public organization is, therefore, a concrete action. The middle managers of public organization must take concrete actions to move the organization toward the desired end. Contemporary research in public management suggests that middle managers are agents in the development and deployment of strategy planning (Burgess & Currie 2013), which in some circumstances may present a role model to the lower-level managers (Bryson, 2011). The concrete action of the middle managers assuredly affects the success of the plan’s design. The action plan is embodied in the strategy choices which provide specific guidelines for individuals and organizations to guide them in acting concretely in the implementation process (Lee et al., 2018). Concrete actions also refer to the project management team in which the team seeks to innovate in divergent ways. They address the collaboration with a range of stakeholders, both external and internal (van Wessel et al., 2011). The project management team also seeks to propose their ideas by translation (Rouleau, 2005) by selecting elements of the innovation and connecting them with other ideas. Lee et al. (2018) also mentioned that disciplined effort and concrete actions can enhance public organizational performance and effectiveness. Role modeling is actively performed in DGSA. An example is innovation for the acceleration of service, efficiency, and transparency of www.lakaspsp.com. The innovation is a middle manager’s idea that has been approved by the top managers to implement. The middle manager plays a strategic role in providing solutions by creating innovations while ensuring that the innovations can be implemented properly by the employees. It represents creating cognitive style. Without the role of the middle managers, there are no creative ideas and no implementation of the innovations and the organizational capacity for change will be low. Consequently, the organizational performance too.

**Conclusion**

We investigate the mediating role of organizational capacity for change to the performance of public organization. Our findings indicate that public organizations should have OCC, and it needs to develop continuously through learning practices, transformative processes, and creating a supportive context for change. Further, this study investigates how middle-level managers’ cognitive style contributes to the development of OCC in public organizations. Our findings exhibit that middle managers’ cognitive style, particularly creating style, is crucial in developing organizational capacity for change. The findings also highlight the importance of middle managers in a public organization when it comes to creating cognitive style in developing OCC. while the knowing and planning cognitive styles are ineffective due to the specific characteristics of a public organization in relation to the knowledge gaps, data reliability, and bureaucratic planning. Finally, our study exhibits that managers’ cognitive styles per se are not enough, but should transform into OCC before it influences organizational performance.

**Theoretical Contributions**

There are several theoretical contributions offered by this study. First, Hodgkinson and Healey (2011) suggested that the biases and inertia-based forces that undermine the OCC have both emotional and cognitive roots. Thus, one may expect to see an equal attempt of studies focused on both sides. However, the study of cognitive influence on OCC remains limited (Eggers & Kaplan, 2009) despite recent studies being conducted on the affective side by Huy and Zott (2018) and Netz et al. (2019). By using CoSi (Cognitive Style Indicator), this study answers the call of Cools et al. (2011) and Armstrong et al. (2012a) to enrich the context and increase the usefulness of the indicator. Second, this study illuminates the research gap on how the cognitive styles represent a fundamental background of individual and organizational behavior (Armstrong et al., 2012a) and a critical variable influencing management practice (Hayes & Allinson, 1994) and performance (Armstrong et al., 2012b). This study offers evidence that cognitive style plays an important role in developing organizational capacity for change, particularly creating cognitive style, before it affects the organizational performance. The findings will extend the organizational change literatures (Heckmann et al., 2016; Klarner et al., 2008) and cognitive styles (Armstrong et al., 2012a; Cools et al., 2011).

Third, this study specifically emphasizes on the roles of middle-level managers in organizational change, particularly in developing OCC. Majority of existing studies examined dynamic capabilities at the executive level (Ambrosini & Altintas, 2019). Further, by examining how the middle-level managers (as change agents) in public organizations contributes to the development of organizational capacity for change is underexplored. Finally, the mediating role of OCC between cognitive styles of middle-level managers and public organizations’ performance is examined. While previous studies mostly been conducted in the context of profit-oriented organizations (Judge & Elenkov, 2005; Judge et al., 2009), service organizations (Heckmann et al., 2016; Judge & Douglas, 2009) and non-profit oriented organizations in the health
sector (Klärner et al., 2008; Zhao & Goodman, 2018), or higher education organizations (Sukoco et al., 2021a, 2021b).

Managerial Implications

Economists argue that government capability is a very important factor for economic growth (Valasek, 2018). In this case, government capabilities are public organizations that have to be effective, efficient, and provide good public services (Piening, 2013). Therefore, the ability of a public organization to make strategic changes such as bureaucratic reform becomes very important to understand (Asatryan et al., 2016). The managerial implications of this study are three-fold. First, public organizations that want to make strategic changes such as bureaucratic reform must pay attention to the involvement of middle managers. They have a significant role as an agent of change (Pick & Teo, 2017) and they have a very important position when implementing strategies (Justesen et al., 2017). Therefore, the appointment and placement of middle manager positions is very important in order to improve organizational performance so then the implementation of strategic change policies can be applied properly. Second, the findings indicate that middle managers’ cognitive styles are of concern in developing organizational capacity for change. Although knowing and planning styles are crucial in public organizations, without proper delegation of authority from the middle manager to the lower manager due to centralization of power it results in less development of OCC (Espinosa & Lindahl, 2016). Therefore, it needs delegation of authority to let lower-level managers and middle managers contribute optimally on change capacities of the organization. Further, since cognitive styles are orthogonal (Armstrong et al., 2012a; Cools & Van den Broeck, 2007), training programs can be designed to develop and facilitate creating cognitive style in order to support the organizational changes.

Limitation and Directions for Future Research

We conducted this study in an Indonesian public sector organization; thus, the generalizability of the results is limited. Future studies may use different national contexts or cross-cultural differences to increase the evidence of OCC in public organizations (Widianto et al., 2021). Moreover, comparing public and private organizations on cognitive styles of the middle managers and the contribution on organizational capacity for change development could be interesting future studies. Second, the cross-sectional design of the present study and the causality among the independent, mediator, and dependent variables are not properly reflected. The role of cognitive styles among middle managers and their contribution in OCC may not be well-described by the cross-sectional survey method. Therefore, by using qualitative and longitudinal studies might reveal the formation of OCC and its effect on performance.

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