

# Ever-present cognitive diversity: The mediating role of sentimentality and creative self-efficacy in achieving ambidextrous behavior

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## ARTICLE INFO

### Keywords:

Perceived cognitive diversity  
Ambidexterity  
Sentimentality  
Creative self-efficacy

## ABSTRACT

Previous research has not determined whether perceived cognitive diversity translates into an advantage. This study explores empirically the relationship of cognitive diversity to ambidexterity. It analyzes not only the direct but also the indirect influence through employees' behavior and traits (creative self-efficacy and sentimentality) that improve the capability of being ambidextrous. We ground this study in self-efficacy theory, and trait activation theory, which studies personality traits (sentimentality) in context (cognitive diversity) and latent inclination to behave in a specific manner (ambidextrous behavior). We used structural equations modeling (SEM) with data from a sample of 211 public employees. The results show both a positive direct effect of perceived cognitive diversity on ambidextrous behavior and a mediating effect of behavior and traits on the relationship. Self-efficacy and sentimentality are attitudes that must be managed jointly with diversity, so that they are not can make them a factor that threatens employees' ambidexterity.

## 1. Introduction

Workforce diversity has become a common reality for organizations (Showkat & Misra, 2022). Taking advantage of such diversity, especially cognitive, helps organizations to find solutions and new approaches (Nguyen et al., 2022). Yet diversity places new demands on organizations. Public administration is not exempt.

Prior research calls for studies of ambidexterity, especially studies that deepen understanding of precisely what it means for public administration employees to exploit and explore, and to achieve ambidexterity (Palm & Lilja, 2017; Smith & Umans, 2015) despite cognitive diversity. Various studies in the scientific literature seek to understand and demonstrate how developing ambidexterity influences public administration. To understand the specific value of these studies from the theoretical and practical perspectives, we systematize the literature on this topic. The first main results of note are obtained by Smith and Umans (2015), who demonstrate that the public managerial approach influences levels of ambidexterity in local government's public administrations. Next, Cannaerts et al. (2016) stress the importance of public administrations using ambidexterity and argue that the structure of public administrations affects their levels of ambidexterity—that is, a different level of centralization and formalization affects ambidexterity level. Among

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<https://doi.org/10.1016/j.tsc.2025.101856>

Received 18 August 2023; Received in revised form 23 February 2025; Accepted 24 April 2025

Available online 25 April 2025

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other examples of ambidexterity in public administration, Kobarg et al. (2017) demonstrate that the employee's individual ambidexterity positively influences performance. An empirical study by Palm and Lilja (2017) investigates the factors of organizational capability and committed leadership to determine whether they encourage ambidexterity in public administration. More recently, Priyanka et al. (2022) study the antecedents of ambidexterity and compare the results for organizations in public administration and the private sector. This study demonstrates the role of the manager's strategic orientation and of essential individual characteristics in achieving ambidexterity in public administrations. Cannaerts et al. (2020) argue that absence of centralization is a necessary condition for ambidexterity. Finally, a very recent study by Alkaabi et al. (2024) shows that ambidexterity positively influences innovation. These authors show that exploitation improves the quality of public service, whereas exploration only affects service quality in the presence of innovation.

In sum, these studies make theoretical and practical contributions to our understanding of how ambidexterity helps public administrations to overcome crises and unfavorable circumstances, and improves public service quality (Alkaabi et al., 2024; Ghanizadeh et al., 2021). Despite the arguments advanced in all the studies described above and their importance for public administration from both theoretical and practical perspectives, it is still important to determine whether public employees can become ambidextrous and how to manage this process (Palm & Lilja, 2017; Alkaabi et al., 2024).

To answer these questions, we start from the premise that perceived cognitive diversity is present in employees in all public organizations. Perceived cognitive diversity facilitates achievement of ambidexterity as long as the organization can handle large amounts of information and various decision-making alternatives, and counteract conflict and ambiguity (Smith & Tushman, 2005). We do not, however, have enough empirical evidence to determine whether perceived cognitive diversity is beneficial for achieving ambidexterity. This study thus draws on prior theoretical research to explain how perceived cognitive diversity can enable organizations to achieve employee ambidexterity. We believe that the presence of other variables could foster and enrich the link between perceived cognitive diversity and ambidextrous behavior to manage perceived cognitive diversity's ambiguous effects.

Prior research has studied the relationship between perceived cognitive diversity and ambidexterity as affected by variables such as ambivalent interpretation, ambidextrous innovation (Kanchanabha & Badir, 2021), trust, connection, shared vision, (Li, 2013), shared responsibility, and cognitive trust (García-Granero et al., 2018).

Another trend in the literature in recent years has related personality traits to exploration and exploitation because these traits correlate with the learning of behavior (Keller & Weibler, 2014; Mom et al., 2009). Keller and Weibler (2014) argued and tested empirically the idea that personality traits influence employees' ambidexterity. Traits are descriptive elements of personality that cause observable behavior (Cattell et al., 1972; Marquez-Arrico & Adan, 2013), which in turn affects employees' performance (Barrick et al., 2013). Because some personality traits lead to behavior involving learning and cognition, they are associated with exploitation and exploration (Barrick et al., 2013).

This study focuses on two personality traits that can improve exploitation and exploration: creative self-efficacy and sentimentality. The first, creative self-efficacy, is considered an important variable in the context of fostering new ideas and developing exploration in ambidexterity. Creative self-efficacy has been shown to help evaluate the personality traits of creative people and these traits' relationship to the people's achievements (Park et al., 2021). Various authors indicate that creative self-efficacy is a psychological process (Lim & Choi, 2009). It is also an individual's capability to believe in their own creative abilities (Bandura, 1977; N. tang Huang et al., 2020). One needs a high degree of creative self-efficacy to develop creative ideas and products, discover knowledge, and innovate (Bandura, 1977; Park et al., 2021). Various studies report the importance of creative self-efficacy to creative thinking and the search for challenges (N. tang Huang et al., 2020; Park et al., 2021).

Some literature analyzes how beliefs in self-efficacy influence individuals' creative behavior and performance (Christensen-Salem et al., 2021; Lim & Choi, 2009). For example, prior studies have examined the workplace and organizations (Tierney & Farmer, 2002), general and cultural self-efficacy (Yi et al., 2008), and the role of leaders in creative self-efficacy (Huang et al., 2016). Employees' creative self-efficacy is thus not a new research topic. The antecedents of creative self-efficacy require further study. Researchers have stressed the increasing importance of identifying the factors or antecedents that contribute to creative self-efficacy (He & Wong, 2022; Karwowski et al., 2019; McKay et al., 2018; Puente-Díaz & Cavazos-Arroyo, 2017). Among the main antecedents studied to date are creativity, innovation, affective state, knowledge, and trust. Our study joins this line of research by using perceived cognitive diversity as an antecedent of creative self-efficacy to attempt to determine the relationship between these variables while also evaluating the mediating role of creative self-efficacy.

Other research analyzes the trait of sentimentality, which is considered a component of kindness and identified with being kind, nice, friendly, and concerned with interpersonal harmony (Saucier & Goldberg, 1996). The trait of sentimentality is a type of affective alignment between an individual, who constructs a set of emotions, and the people around that individual (Zembylas, 2021). This trait is activated by specific signals and situations. Sentimentality also indicates openness to knowledge from others and is related to humility, faith, empathy, charity, and hope (Flórez & Acosta López de Mesa, 2022). As the tendency to form and maintain strong affective bonds, sentimentality predicts concern, empathy, and emotional attachment to other people (Ashton et al., 2014; Mael, 1988). Mael (1988) argues that an inclination to hold onto memories and form attachments would make identification with other individuals more likely, demonstrating capability to exploit one's past knowledge and that of one's colleagues.

Both creative self-efficacy and sentimentality are relevant to this study, as both traits could condition management of the relationship between ambidexterity and exploitation of existing knowledge and skills (Cannaerts et al., 2020). To analyze these traits, our study draws on two theories. The first is self-efficacy theory, which shows the relevance of confidence in oneself (Bandura, 1977), confidence to complete tasks that involve a challenge, and belief in one's own capability and achievement of success in a specific situation (Hirst et al., 2018). These beliefs are determining factors in one's way of thinking, behaving, and feeling. The second is trait activation theory (TAT), which seeks to comprehend the complexities of employee personality development in the workplace (Tett &

Burnett, 2003). TAT predicts that latent personality traits are activated in reaction to significant contextual signs in the environment and influence the employee's performance. Activation and identification of signals is relevant to our study because it explains how we assimilate different situations and behave in them.

Based on prior arguments, we investigate not merely the simple direct relationship between perceived cognitive diversity and ambidexterity but also other variables that may influence this relationship. Determining mechanisms that mitigate the undesirable effects of perceived cognitive diversity would improve understanding of how employees achieve ambidexterity. Empirical evidence of such mechanisms would be a valuable contribution to the literature on ambidexterity and diversity. The model we propose (see Fig. 1) is thus derived from application of these two theories, which enable us to analyze how possessing creative self-efficacy and sentimentality increases public employees' ambidexterity in the diverse environment in which they work today.

Based on Bandura's (1977) theory of self-efficacy, we consider creative self-efficacy as a mediating mechanism through which perceived cognitive diversity transforms into ambidextrous behavior in public administration employees. The literature indicates that while creative self-efficacy is essential for creative thinking and seeking challenges (N. Tang Huang et al., 2020; Park et al., 2021), it does not operate in isolation. Creative self-efficacy serves as a conduit connecting antecedents, such as perceived cognitive diversity, to outcomes, such as ambidextrous behavior.

Empirical research supports this mediating role, for example, studies by Bandura (1977); Tierney and Farmer (2002); Lim and Choi (2009); Puente-Díaz and Cavazos-Arroyo (2017); Karwowski et al. (2019); Zhang et al. (2018) and Gong et al. (2009) show the role of creative self-efficacy as a mediation mechanism. Similarly, He and Wong (2022) and Karwowski et al. (2019) emphasized the need for further investigation into the factors that contribute to creative self-efficacy. Therefore, in this study, we propose to continue these investigations through perceived cognitive diversity as an element that may be related to creative self-efficacy and ambidextrous behavior in public administration employees.

On the other hand, Anderson et al. (2014) argued that more studies are needed to focus on understanding the role personality can play in innovative behavior. Studies have also shown that emotions and personality traits can act as facilitators or inhibitors in interpreting diverse information (George & Zhou, 2007). Therefore, in this research, we propose sentimentality as a bridge between perceived cognitive diversity and ambidextrous behavior, as sentimentality can influence how individuals process cognitive diversity in their environment. In this sense, sentimentality highlights how a person perceives and responds to cognitive diversity, which impacts their ambidextrous behavior.

Previous research has shown that cognitive diversity alone does not guarantee positive outcomes in terms of innovation and creativity; rather, its effect depends on individual and contextual factors (Van Knippenberg et al., 2004). In this model, cognitive diversity provides input from multiple perspectives, but it is sentimentality that influences how an individual internalizes this diversity and develops and manages their sentimentality. In summary, sentimentality, as a personality trait, affects how employees interact with diverse ideas, which then impacts their confidence to generate innovative solutions (Fredrickson, 2001). If sentimentality were considered the independent variable, the model would lose the explanation of the mechanism through which cognitive diversity influences innovation. The proposed mediating structure allows for a deeper understanding of the underlying psychological process and aligns with previous research on creativity, personality, and diversity in the workplace (Cabeza-Pullés et al., 2018).

To address the foregoing issues, we propose the following question: Does indirect management of public administration employees' creative self-efficacy and sentimentality positively influence these employees' ambidextrous behavior (exploratory and exploitative) even if they are cognitively diverse? Our main goal is to analyze the mediating role of creative self-efficacy and sentimentality in the relationship between perceived cognitive diversity and ambidextrous behavior in public employees.

After providing information on the variables of perceived cognitive diversity and ambidextrous behavior, we will analyze the effect of sentimentality and creative self-efficacy on the relationship between these variables. We then present the methodological approach, description of the sample, and data analysis. Finally, we analyze and discuss the results, present their implications, and propose future lines of research.

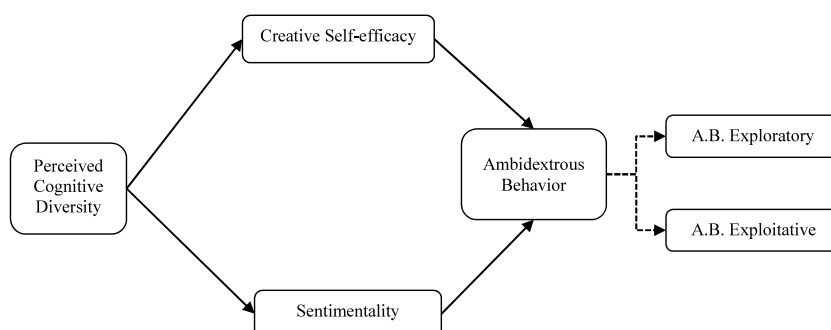


Fig. 1. Theoretical model.

## 2. Theory development and hypotheses

### 2.1. Perceived cognitive diversity

Perceived cognitive diversity is conceptualized as differences perceived in the attitudes, values, beliefs, styles, thinking skills (Shin et al., 2012), underlying assumptions about issues, (Mohammed & Ringseis, 2001), information, knowledge, and perspectives (Van Knippenberg & Schippers, 2007) expressed by different individuals who coexist and work together in an organization (Nowak, 2020). Organizations with high perceived cognitive diversity possess a wide range of information (Miller et al., 1998). This breadth of information helps to identify and choose specific solutions to solve problems (Nguyen et al., 2022) and increases relevant knowledge in the organization as a whole (Nowak, 2020). For example, in a study of the public healthcare sector, Mitchell et al. (2017) indicate that employees' perceived cognitive diversity generates internal debates that lead to higher levels of knowledge. Some academics argue that perceived cognitive diversity is a double-edged sword and that differences among colleagues have some negative effects (Chen et al., 2019; Kim et al., 2021), such as conflict and lack of understanding due to different approaches, skills, values, and opinions.

We therefore believe it is valuable to study employees' perceived cognitive diversity to determine when and how it affects employees negatively or positively (Chen et al., 2019; Kanchanabha & Badir, 2021; Kim et al., 2021). To meet this challenge, and because organizations seek to be in the lead, we study not only perceived cognitive diversity but also employees' ambidexterity, which is relevant to their capability to exploit current opportunities and explore future possibilities (Priyanka et al., 2022).

### 2.2. Employee ambidexterity

This study's examination of organizational ambidexterity is based on contextual theory of this construct at employee level. We analyze this level because organizations need employees' exploitation and exploration skills for long-term survival (Priyanka et al., 2022). From this perspective, exploratory activities in the workplace consist of public employees seeking and implementing new ideas, solutions, and innovative thinking (Caniëls et al., 2017; Gibson & Birkinshaw, 2004). Exploitation activities, in contrast, consist of exploiting foundational knowledge and skills to improve efficiency and efficacy (Cannaerts et al., 2020; Gibson & Birkinshaw, 2004).

The concept of employee ambidexterity is defined as individuals' behavioral orientation to the balanced search for exploitation and exploration activities within a specific period of time (Mom et al., 2009). Thus, the higher the level of both activities (exploration and exploitation), the better employees' performance (Cannaerts et al., 2020).

Since studies of ambidexterity in public administrations are quite novel and recent (Cannaerts et al., 2020; Palm & Lilja, 2017), further study is useful to continue to advance the literature. For example, we have little knowledge of how employees achieve exploration and exploitation (Caniëls et al., 2017; Priyanka et al., 2022), and prior studies call for analysis of ambidexterity at employee level (Prieto & Pérez-Santana, 2012). Tackling this issue requires acknowledging that all persons have specific personality traits that describe their emotional and behavioral responses to the world around them. Such traits include the search for novelty, extraversion, perseverance, tolerance, openness to experience, timidity, dependence, and sentimentality, among others (Conlin et al., 2015). Our study includes sentimentality and creative self-efficacy because we believe these traits can enrich employee ambidexterity.

### 2.3. The relationships of perceived cognitive diversity to creative self-efficacy and sentimentality

#### 2.3.1. Perceived cognitive diversity and creative self-efficacy

Creative self-efficacy gives employees great confidence in their creative capability, enabling them to conceive of creative results when facing any situation (Caniëls et al., 2017). Prior studies argue that creative self-efficacy increases employees' motivation, since creative and innovative ideas produce positive sentiments that motivate employees' performance (Bandura, 1977; Farmer & Tierney, 2017; Park et al., 2021).

Organizations are increasingly aware of the benefits of perceived cognitive diversity as it provides to the complementarity of different knowledge bases, perspectives, and opinions needed to solve difficult problems (Uzzi et al., 2013). Prior studies have identified perceived cognitive diversity as one of the most significant factors affecting creativity (Williams & O'Reilly, 1998) because it enables greater information processing capability (Watson et al., 1993) among individuals. More specifically, Shin et al. (2012) found a positive association between perceived cognitive diversity and creativity in conditions of high self-efficacy in Chinese companies, as high levels of perceived cognitive diversity helped workers to identify new ideas from exogenous sources. More recently, Park et al. (2021) have asserted that creative tasks often require new ideas, solutions, and syntheses of previous experiences, enabling perceived cognitive diversity to benefit creative self-efficacy (Shin et al., 2012).

Cognitively diverse public organizations have a broad base of knowledge, skills, and different experiences (Jackson, 1992) that help to foster creative self-efficacy. Perceived cognitive diversity stimulates creative and divergent thinking (Olson et al., 2007), which can be essential for strengthening openness to creative self-efficacy. Many of the studies mentioned above argue relationships between the variables perceived cognitive diversity and creative self-efficacy, highlighting that perceived cognitive diversity openness to using diverse cognitive resources to generate creative ideas (Shin et al., 2012). When perceived cognitive diversity is present, it is easier to solve problems, as broader, more varied thinking is brought to bear on issues than if perceived cognitive diversity were absent. Perceived cognitive diversity may also provide an advantage because it generates a broader range of original and useful ideas, strengthening development of employees' creative self-efficacy.

Prior studies identify creativity, innovation, affective state, knowledge, and trust (among others) as antecedents of creative self-efficacy (He & Wong, 2022; Karwowski et al., 2019; McKay et al., 2018; Puente-Díaz & Cavazos-Arroyo, 2017).

In this study, public employees rated the degree to which their way of thinking differed from that of the other employees in terms of knowledge, skills, and beliefs. Such individual perception reflects a personal estimation of cognitive diversity. According to [Shin et al. \(2012\)](#), perception of diversity drives a person's creative efficacy. Because employees are conscious of the advantages generated by different ways of thinking and behaving, they are driven to increase their creativity, which in turn drives their creative self-efficacy ([Gong et al., 2020](#)). We thus expect variety in knowledge, information, skills, and beliefs in employees to increase creative self-efficacy.

Based on the foregoing arguments, we propose the following hypothesis:

**H1.** Perceived cognitive diversity is directly and positively related to creative self-efficacy in public administration employees.

### 2.3.2. *Perceived cognitive diversity and sentimentality*

Very little research in the literature tackles sentimentality. The few studies identified relate sentimentality to nostalgia, even though the two are different concepts ([Best & Nelson, 1985](#); [Mael, 1988](#)). Sentimentality is the tendency to experience high emotivity when thinking of a person, place, or past experience ([Abeyta & Routledge, 2020](#)). As a trait that predicts empathetic response to others, sentimentality is considered a primarily positive factor that contributes to success in connecting with others and generates a bond with employees who present common traits ([Abeyta & Routledge, 2020](#); [Ashton et al., 2014](#); [Mael, 1988](#)). We thus believe that individuals who develop sentimentality are more empathetic and compassionate and that these characteristics enable them to integrate better socially ([Hansenne et al., 2005](#)) in environments with which they perceive an affinity and in which they believe they can help.

The trait of sentimentality is associated with being honest, altruistic, cooperative, empathetic, committed, trusting, and understanding ([De Vries et al., 2008](#); [Flórez & Acosta López de Mesa, 2022](#)). Perceived cognitive diversity, in contrast, stresses dissimilarities among employees in personal attributes, age, race, values, ways of thinking, and work-related attributes ([Chen et al., 2019](#)). Differences between employees tend to hinder emotional connections and thus not to encourage empathy or employees' development of trait of sentimentality. Perceived cognitive diversity and the differences it entails affect the formation of ties among employees, with undesirable effects such as interpersonal conflicts ([Chen et al., 2019](#); [Nguyen et al., 2022](#)), communication errors ([Jackson et al., 1995](#)), lack of unity ([Ancona & Caldwell, 1992](#)), and problems with coordination and commitment ([Nguyen et al., 2022](#)). All of these effects can affect individuals' feelings, tending to decrease frequency of interaction among employees with perceived cognitive diversity. That is, the more diverse public employees are in their beliefs, ways of perceiving the world, and ways of thinking and analyzing, the less empathy they feel toward others, making it more difficult to create bonds that help to develop sentimentality. Based on these arguments, we propose the following hypothesis:

**H2.** Perceived cognitive diversity is directly and negatively related to sentimentality in public administration employees.

## 2.4. *The relationship of creative self-efficacy and sentimentality to ambidextrous behavior in employees*

### 2.4.1. *Creative self-efficacy and ambidextrous behavior*

Prior studies show that creative self-efficacy is a central element in developing knowledge ([Wang et al., 2018](#)). For example, [DiLiello et al. \(2011\)](#) argue that individuals with a higher level of creative self-efficacy tend to express more inventive interest, which drives them to pursue knowledge. The literature also indicates that curiosity is an antecedent of creative self-efficacy ([Puente-Díaz & Cavazos-Arroyo, 2017](#)), because curiosity is a motivational state associated with exploration ([Frain, 1982](#)). Creative self-efficacy is thus an important mechanism in developing the knowledge and competences ([Gong et al., 2009](#)) needed for ambidextrous behavior because it supports the search for and intense desire to study new events ([Park et al., 2021](#)).

Creative self-efficacy is also an important element in daily work ([Wang et al., 2018](#)). It reflects an internal strength that supports and thus stimulates people to persevere when facing challenges in their work ([Tierney & Farmer, 2002](#)). When public employees draw on creative self-efficacy, they strengthen exploratory analysis as one aspect of ambidextrous behavior ([Hirst et al., 2018](#)) by striving to develop strategies to explore new skills and knowledge ([Oborn et al., 2013](#)). Greater creative self-efficacy thus contributes to acquiring and adapting new knowledge, thereby strengthening exploration, which is a primary characteristic of ambidextrous behavior ([March, 1991](#); [Wang et al., 2018](#)).

Creative self-efficacy also guarantees that employees believe strongly in themselves ([Tong et al., 2017](#)). This condition contributes to building trust in themselves and in their workplace. Employees with greater self-efficacy thus have a strong sense of trust in their environment, a quality that also enables them to develop exploitation behavior ([Tang & Wei, 2022](#)).

Prior research indicates that organizations should foster an environment of creativity in their employees to make the organization ambidextrous ([Caniëls et al., 2017](#); [Cannaerts et al., 2020](#); [Priyanka et al., 2022](#)). Creative self-efficacy leads employees to have great confidence in their creative capability ([Farmer & Tierney, 2017](#)). Further, their internal drive to pursue their ideas usually leads employees with creative capability to generate exploitative and exploratory ideas ([Caniëls et al., 2017](#)). This reasoning suggests that developing creative self-efficacy has a positive impact on employees' capability to achieve ambidextrous behavior. We thus propose the following hypothesis:

**H3.** Creative self-efficacy is directly and positively related to ambidextrous behavior in public administration employees.

### 2.4.2. *Sentimentality and ambidextrous behavior*

As argued above, sentimental employees tend to hold onto connections from the past, relive them, and retain memories ([Mael, 1988](#)). Sentimentality studies mental commitment to the past and the effect of this commitment on each individual. Because sentimentality involves a primarily positive attitude to the past ([Gergov & Stoyanova, 2013](#)), individuals inclined to sentimentality tend to



rely and remember past experiences, making it possible for them to lack motivation developing new knowledge. Sentimentality is also considered a mainly positive component as a trait that contributes to interpersonal warmth, successfully generating connection to others (Zeigler-Hill & Shackelford, 2020).

Ambidextrous behavior, in contrast, is behavior that stems from the capability to acquire and adapt the new knowledge (March, 1991) needed to develop exploration and exploitation. Sentimentality may affect exploration and exploitation differently. We believe that employees with a mental commitment to the past will be less likely to manage exploration of new ideas. This commitment thus reduces these employees' efficiency and prevents them from improving existing processes (March, 1991). Employees who develop sentimentality could, however, achieve exploitation by exploiting past knowledge bases (Gibson & Birkinshaw, 2004). Yet only focusing on exploitation can restrict exploration (Benner & Tushman, 2003), turning central competences into central rigidities (Leonard-Barton, 1992). Some studies support the conclusion that ambidextrous organizations should seek to achieve a simultaneous balance between exploration and exploitation (Sun & Hu, 2022), requiring the organization to develop and control both processes (exploration and exploitation) to achieve ambidexterity. The more traits of sentimentality are present, the more difficult it will be to develop ambidextrous behavior. We therefore propose the following hypothesis:

**H4.** Sentimentality is directly and negatively related to ambidextrous behavior in public administration employees.

## 2.5. Mediating roles

### 2.5.1. The mediating role of creative self-efficacy

We draw on self-efficacy theory to propose self-efficacy as a mediator. Self-efficacy theory (Bandura, 1977) acknowledges the importance of employees' confidence that they can complete tasks that are challenging to them (Hirst et al., 2018). Because it involves the belief that people have in their capabilities, self-efficacy is a vital mechanism inherent in regulation (Bandura, 1991; Tierney & Farmer, 2002).

Based on the foregoing, we believe creative self-efficacy could be mediator in cognitively diverse employees who wish to improve their ambidextrous behavior. Developing creative self-efficacy can open mindset employees to a variety of knowledge, skills, experiences, and perspectives (Hirst et al., 2018). Such employees feel not only more secure and able to adopt different ways of thinking and behaving to generate original ideas and solutions, but also more effective in challenging and changing situations.

The development of creative self-efficacy fosters open-mindedness and curiosity toward new ideas and perspectives, qualities that help employees, despite their cognitive diversity, to be more ambidextrous (Ghanizadeh et al., 2021). Because employees with creative self-efficacy explore new ideas and perspectives, they can be flexible and adapt better to changing challenges and opportunities (Paulus & Nijstad, 2010), even if they have cognitively diverse colleagues. Employees with creative self-efficacy are continuously oriented to achieve creative goals in the midst of difficulties (Naotunna & Zhou, 2018). Because they have confidence and believe in themselves, they are more motivated to exploit existing functions and explore new characteristics of their work (Vignoles et al., 2006). Such activity facilitates ambidextrous behavior, even in the presence of perceived cognitive diversity.

Previous research, has shown that perceived cognitive diversity fosters creative self-efficacy (Shin et al., 2012), which could exert a positive influence on ambidextrous behavior (Priyanka et al., 2022; Tang & Wei, 2022). That is, creative self-efficacy mediates the impact of cognitive diversity on ambidextrous behavior. Because creative self-efficacy is a positive source of more innovative solutions

Based on this premise and due to the characteristics of creative self-efficacy, we propose the following hypothesis:

**H5.** Creative self-efficacy mediates the relationship between perceived cognitive diversity and ambidextrous behavior in public administration employees.

### 2.5.2. The mediating role of sentimentality

We also consider sentimentality as a mediator between perceived cognitive diversity and employee ambidexterity. This analysis helps to resolve the controversy over the negative and positive effects of perceived cognitive diversity and personality traits. TAT predicts that latent personality traits are activated in response to significant contextual signals in the environment and influence employees' performance. Since traits and performance are related and vary depending on the context in which they are developed, skills, and personality factors (Tett & Burnett, 2003), TAT identifies three sources of signals relevant to traits. The first are task-level signals, or day-to-day tasks at work. The second are social-level tasks resulting from interactions with colleagues. Finally, organizational-level signals come from the organization's climate, culture, and structure. Our study focuses on social-level signals.

The social context—in this case, employees' perceived cognitive diversity—creates signals that activate sentimentality as a personality trait. Sentimental individuals identify as people who have attributes such as empathy, comradeship, and collaboration. They are influenced by these expressions and can in turn influence and attempt to socialize with other employees.

For Tett and Burnett (2003, p. 505), the most obvious way that the social-level indicator triggers the process that activates the trait is by creating demands, performance, or behavior, defined as "opportunities to act in a positively evaluated way." A cognitively diverse context thus activates the trait of sentimentality, which can unify the group and ultimately influence ambidextrous behavior. The activation process is crucial for understanding sentimental individuals' potential in a cognitively diverse group. Individuals with traits of sentimentality that are not activated, in contrast, will not act as members who seek unity, attachment, and empathy with the other members. We therefore postulate that the relationship of perceived cognitive diversity to ambidextrous behavior of employee's sentimentality needs sentimental employees to mediate the ambidextrous behavior caused by cognitive diversity. Considering these employees' levels of empathy and collegiality will improve explanation of this mediation relationship.

Tett and Burnett (2003) understand perceived cognitive diversity as a social signal related to employees' attributes and personality

precisely because personality traits are latent inclinations to behave in certain ways in specific situations in the social context. We thus attempt to determine whether ambidextrous behavior occurs when sentimental characteristics are activated in the presence of cognitive diversity. This theory can help us to understand whether activation of employees' traits (in this case, sentimentality) does or does not mediate the relationship between situational factors (perceived cognitive diversity) and public employees' behavior (ambidextrous behavior).

In sum, a context with perceived cognitive diversity creates signals that activate traits of sentimental personality in sentimental employees, potentially improving a specific ambidextrous behavior. This process occurs due to sentimental people's tendency to experience high emotivity (Abeyta & Routledge, 2020), which generates bonds with other employees (Abeyta & Routledge, 2020), improving social integration (Hansenne et al., 2005) in the environments where these people are present. Activating sentimentality thus means activating cooperation, empathy, and understanding (Flórez & Acosta López de Mesa, 2022).

Sentimental people can also help to decrease conflict, a phenomenon that translates into more innovation (Chen et al., 2019). Following this line of argument, we postulate that proper management of sentimentality can help to generate empathy and collaboration. Such a situation can also help to overcome potential conflicts due to differences, enabling organizations to exploit the positive aspects of strong intellectual stimulation produced by perceived cognitive diversity. Sentimental employees thus contribute to an environment much better suited to ambidextrous behavior. We thus expect perceived cognitive diversity to have an indirect impact on ambidexterity through sentimentality. Based on this reasoning, we propose the following hypothesis:

**H6.** Sentimentality mediates the relationship between perceived cognitive diversity and ambidextrous behavior in public administration employees.

Based on the hypotheses developed, we present the theoretical model proposed in this study (see Fig. 1).

### 3. Methodological approach

#### 3.1. Research context and sample

We collected data from employees who work in Peru's public administration. We designed a questionnaire for virtual administration, with a template that enabled us to collect the data online. We also attached a cover letter explaining the study goal. So as not to tire respondents as they answered the questions, we divided the survey into sections separated by instructions (Terglav et al., 2016). The employees provided data on demographic variables, perceived cognitive diversity, creative self-efficacy, sentimentality, and ambidextrous behavior.

The final sample consisted of 301 respondents. After eliminating incomplete surveys, we obtained 211 valid responses. The final sample was composed of 55 % women and 45 % men. The average age was 40 (and ranged from 30 to 45). Of the total sample, 59 % of participants had pursued postgraduate study. Most were professionally trained in the social sciences (69 %), and 52 % had worked in the public sector 6–15 years and over 5 years within the same institution. On average, most worked in departments of fewer than 15 employees. Table 1 presents the most significant sociodemographic characteristics of the sample:

#### 3.2. Measurements

The instrument in this study was a survey based on measures established in prior studies. The questionnaire items used a Likert-type response scale.

**Table 1**  
Sociodemographic characteristics of the sample.

Profile of respondents (N = 211)	(%)	Total		(%)	Total
<b>Gender</b>			<b>Years working in the public sector</b>		
Female	55 %	116	<5 years	33 %	69
Male	45 %	95	6–15 years	52 %	110
<b>Age</b>			>16 years	15 %	32
<29	32 %	67	<b>Years in the institution</b>		
30–45	53 %	112	1–2 years	35 %	74
>46	15 %	32	3–5 years	22 %	45
<b>Education</b>			>6 years	44 %	92
Technical education	0 %	0	<b>Number of employees in my department</b>		
University studies	41 %	87	<15 persons	64 %	135
Postgraduate studies	59 %	124	16–30 persons	18 %	38
<b>Profession</b>			>31 persons	18 %	38
Social Sciences	69 %	146			
Engineering and Architecture	28 %	58			
Natural Sciences	4 %	7			
<b>Ministry</b>					
Economy	68 %	143			
Culture	32 %	68			

Source. The authors.

**Perceived cognitive diversity** was measured using a construct validated by Kim et al. (2021) and composed of 4 items that measure the degree of cognitive diversity perceived by employees (e.g., “How much do work team members differ in their knowledge and skills?”). The responses were recorded on a 7-point Likert-type scale with values from “Very little” to “Very greatly.” **Ambidextrous behavior** was measured on a 7-point Likert-type scale ranging from “Very little” to “Very greatly.” This variable was treated as a second-order reflexive construct because it has two dimensions: exploration (6 items) and exploitation (6 items). The items were validated by Mom et al. (2009). For both dimensions, we asked questions appropriate to measuring the variable, such as “Are you actively involved in activities that require learning new skills or knowledge?” to measure exploration, and “Do you participate actively in activities in which you have accumulated extensive experience?” for exploitation. To measure the construct **creative self-efficacy**, we used the scale validated by Carmeli and Schaubroeck (2007), which has a total of 8 items (e.g., “I believe I can succeed at any creative effort I undertake”). Responses were recorded on a 6-point Likert scale ranging from “Completely disagree” to “Completely agree.” Finally, the variable **sentimentality** had 7 items validated by Mael and Ashforth (1992), which seek to measure employees’ degree of sentimentality. This variable was measured using a 5-point Likert scale ranging from “Strongly agree” to “Strongly disagree.” Items included sentences such as: I like to keep mementos from interesting places or events.

### Control variables

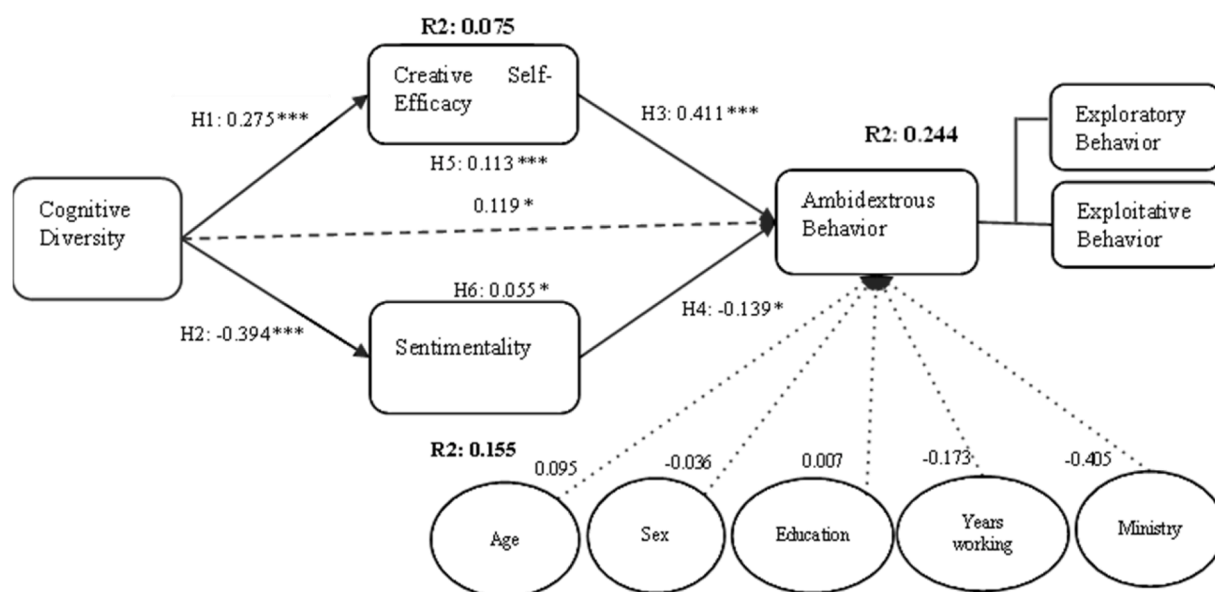
The first control variable included was gender as a dichotomous variable; the second was age. Prior studies indicate both variables’ possible influence on the work environment and the importance of analyzing them (Leahey, 2006). Third, we included education level, classified into three categories: technical studies, university studies, and postgraduate studies. Fourth, we included years working in the public sector, in ranges of fewer than 5 years, 6–15 years, and >16 years. Finally, we considered the ministry to which each employee belonged, as shown in the research model and the results (Fig. 2).

### 3.3. Data analysis

The analysis used structural equations modeling (SEM). SEM has become a fundamental part of quantitative analysis that enables analysis of data (Hair et al., 2017) compiled using Smart PLS (v. 3.3.3) software. We followed the guidelines step by step for best practices available in the current literature on PLS (Benitez et al., 2020).

The psychometric properties of the reflexive measurements were analyzed by calculating the Average Variance Extracted (AVE), Composite Reliability (CR), Alpha Cronbach, and correlations of the latent variables and cross-loadings. We used the general rule, in which CR must be above 0.7 (Yi & Davis, 2003). The results showed good discriminant and convergent validity. The study model also includes mediations and second-level constructs. Various authors argue that PLS-SEM is one of the methods best suited to this type of analysis (Hair et al., 2017; Henseler et al., 2015). The variables perceived cognitive diversity, creative self-efficacy, and sentimentality refer to employees’ behavior, attitudes, or perceptions. As they are theoretical concepts and not directly observable, the literature has classified them as reflexive (Hair et al., 2019). The variable ambidextrous behavior is evaluated through a disjoint two-stage approach because it is a second-order reflexive, or multidimensional, construct (Sarstedt & Cheah, 2019). We eliminated incomplete responses, which enabled us to eliminate a significant impact of outliers. No data were lost.

For bootstrapping, 10,000 subsamples were used to obtain stability in the model and the estimations. We also established the



**Fig. 2.** Results of the structural model analysis

Notes: \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001.



significance level to reject the null hypothesis at 5 % (one-tailed). The next section describes the results obtained.

### 3.4. Common method variance tests

The data were obtained from the respondents themselves, and the four constructs used represent subjective measures. Given the possibility of common method bias, we proceeded to perform two tests. The first was Harman's single factor test, which is recommended and widely used in the literature (Podsakoff et al., 2003). To perform this test, we loaded all variables into exploratory factor analysis, restricting the number of factors to 1. As the first component represented <50 % of all variables (25.542 %), common method variance is not a serious problem in our sample.

Second, we performed an exploratory factor analysis for the first-order constructs. This analysis showed four first-order factors with eigenvalues > 1.0 representing 71.943 % of the variance. Since no single factor emerged and the first factor did not explain most of the variance, we again concluded that common method variance is not a serious concern.

Because both tests confirm the absence of problems related to common method variance, we believe that common method variance is not a problem in the sample.

## 4. Results

### 4.1. Measurement model

To analyze the first-order measurement model (see Appendix A) and the second-order model (see Table 2), we performed confirmatory factor analysis to validate the structural factor of the main constructs and examine their distinctive character. We began by guaranteeing the individual reliability of each item. We examined the loading or simple correlation of each construct to determine whether it was above 0.7 (Henseler et al., 2015). In the first-order model, we eliminated items CD(SQ003), CSE(SQ001), SS(SQ003), SS(SQ006), SS(SQ007), Cler(SQ001), Cler(SQ004), Clet(SQ005), and Clet(SQ006). The results for the Alpha Cronbach were above 0.7. The Dijkstra-Henseler's (Rho\_A) statistic also showed values above 0.7, guaranteeing the correlation between the reflexively estimated composites (Dijkstra & Henseler, 2015).

The AVE was above the threshold of > 0.5 (Benitez et al., 2020) required to strengthen content validity, ensuring convergent validity at construct level (Gefen et al., 2000). We repeated the procedure just explained in the second-order analysis (see Table 2). In this case, ambidextrous behavior is a second-order construct.

**Table 2**  
Reliability and convergent validity for second-order reflexive latent variables.

Item	Code	Cronbach's $\alpha$	Individual reliability	Dijkstra-Henseler's (Rho_A)	Composite Reliability	Average Variance Extracted (AVE)
<b>Cognitive Diversity</b>	CD(SQ001)	0.856	0.888	0.857	0.912	0.776
	CD(SQ002)		0.873			
	CD(SQ003)		Eliminated			
	CD(SQ004)		0.882			
<b>Sentimentality</b>	SS(SQ001)	0.881	0.847	0.897	0.917	0.735
	SS(SQ002)		0.819			
	SS(SQ003)		Eliminated			
	SS(SQ004)		0.847			
	SS(SQ005)		0.914			
	SS(SQ006)		Eliminated			
	SS(SQ007)		Eliminated			
	CSE (SQ001)		Eliminated			
	CSE (SQ002)		0.851			
	CSE (SQ003)		0.908			
<b>Creative Self-Efficacy</b>	CSE (SQ004)	0.956	0.944	0.959	0.964	0.792
	CSE (SQ005)		0.894			
	CSE (SQ006)		0.859			
	CSE (SQ007)		0.856			
	CSE (SQ008)		0.914			
	Exploratory		0.944			
	Exploitative		0.912			
<b>Ambidextrous Behavior</b>						

Note. Italics used for second-order construct values.

In addition to convergent validity, we evaluated discriminant validity of the first-order model (see Appendix A) and the second-order model (see Table 3) to guarantee that the measurements of the separate constructs were not unduly correlated amongst themselves. We did so using the HTMT indicator. The general rule for evaluating discriminant validity is that the lower threshold be 0.90 (Hair et al., 2019; Henseler et al., 2015). From our results, shown in Table 3, we conclude that the HTMT value is significantly lower than this threshold. Our measurements are therefore valid; each construct measure in the model measures a different concept (Hair et al., 2020; Henseler et al., 2015).

#### 4.2. Structural model

To evaluate the structural model, we used central metrics recommended by various scholars (Benítez et al., 2020; Hair et al., 2020). We began by exploring the collinearity of the constructs. Next, we examined the statistical significance and relevance of the path coefficient, effect size  $f^2$  for the hypotheses proposed, and finally the coefficient of determination  $R^2$ . Table 4 displays the results. Next, we measured the constructs' predictive relevance and overall model fit (Hair et al., 2019).

Collinearity level was evaluated using the variance inflation factor (VIF). We obtained values under 3 for all cases, verifying that collinearity is not a problem in the model presented and no bias is present. Next, we performed *bootstrapping*, with 10,000 subsamples (one-tailed). These results are shown in Tables 4 and 5 and Fig. 2. Based on Cohen (1992), we highlight a strong effect identified for H3, where the effect of  $f^2$  was 0.204. Our control variables, ministry and years working in the organization, showed a significant relationship to employees' ambidextrous behavior. This was not the case for education, sex, and age.

The structural model (see Fig. 2) indicates that perceived cognitive diversity is positively related to creative self-efficacy ( $f^2=0.082$ ), confirming hypothesis H1. The data also indicate a negative relationship between perceived cognitive diversity and sentimentality ( $f^2=0.183$ ), supporting hypothesis H2. For H3, we confirm a positive relationship between creative self-efficacy and ambidextrous behavior, and for H4 a negative relationship between sentimentality and ambidextrous behavior. We will develop the mediation hypotheses (H5 and H6) in the following section, due to their significance.

Finally, we evaluated the Standardized Root Mean Square Residual (SRMR), which indicates fit of the empirical data to the theoretical model presented. An SRMR lower than 0.10 signals good model fit (Williams et al., 2009), indicating that it is good to accept the model and that the model explains the data analyzed (Benítez et al., 2020). The value for the saturated model is 0.065 and for the estimated model 0.079.

As to variance explained for the dependent variables, we used the criterion of the coefficient of determination  $R^2$  (see Fig. 2).  $R^2$  values around or higher than 0.2 are considered high, due to the model's complexity (Hair et al., 2017).

#### 4.3. Mediation analysis

The mediating effects of creative self-efficacy and sentimentality on the relationship between perceived cognitive diversity and ambidextrous behavior are specified in H5 and H6. To analyze the mediating effect, we began by analyzing the direct relationship between perceived cognitive diversity and ambidextrous behavior. Although this relationship was not hypothesized, it is understood in the model. Table 5 presents the results for both effects (direct and indirect). The relationship between perceived cognitive diversity and ambidextrous behavior was direct and significant ( $\beta = 0.119$ ;  $p = 0.0040$ ). The indirect effects, in contrast, were as follows: creative self-efficacy and sentimentality partially mediated the relationship between perceived cognitive diversity and ambidexterity, confirming H5 ( $\beta = 0.113$ ;  $p = 0.0040$ ) and H6 ( $\beta = 0.055$ ;  $p = 0.000$ ). These results suggest that creative self-efficacy and sentimentality act as partial mediators (Hair et al., 2017), since a direct effect exists between diversity and self-efficacy. Creative self-efficacy and sentimentality thus intervene as mediators, enriching explanation of the relationship between perceived cognitive diversity and ambidextrous behavior.

##### 4.3.1. Sensitivity analysis of the mediators

We conducted a sensitivity analysis of the mediation since the indirect effect in our study is significant. For this, we used the R statistical program, specifically the R-medsens function from the Mediation package. First, the mediation analysis was replicated, confirming the previously obtained results (partial mediation) in SMART PLS. Secondly, a sensitivity analysis was performed using the 'medsens' function (Tingley et al., 2014). Fig. 3 shows the sensitivity analysis for creative self-efficacy and sentimentality. The 'x' axis represents the sensitivity parameter ( $\rho$ ) ranging from -0.5 to 0.5, while the 'y' axis represents the average mediated effect (ACME) in an approximate range of -4 to 4 for creative self-efficacy and -5 to 5 for sentimentality. Additionally, the threshold of the mediated effect (dashed line) and the values the indirect effect would reach by varying the sensitivity parameter (continuous curved line)

**Table 3**  
Discriminant validity assessment using HTMT criterion for second-order constructs.

Variables	CSE	AB	CD	SS
1:CSE	–			
2:AB	0.472			
3:CD	0.299	0.308		
4:SS	0.120	0.242	0.444	–

Note. Italics used for second-order construct values.

**Table 4**  
Structural model evaluation of hypotheses and control variables.

Hyp.		VIF	t- Value	Path Coeff.	Confidence Interval 95 %	f2		Conclusion
H1:CD-CSE		1.000	5.778	0.275	[0.190, 0.346]	0.082	(Weak-effect)	<b>H1:</b> Supported
H2:CD-SS		1.000	7.744	-0.394	[-0.469, -0.299]	0.183	(Moderate-effect)	<b>H2:</b> Supported
H3:CSE-AB		1.093	6.806	0.411	[0.307, 0.506]	0.204	(Strong-effect)	<b>H3:</b> Supported
H4:SS-AB		1.196	1.857	-0.139	[-0.264, -0.017]	0.021	(Weak-effect)	<b>H4:</b> Supported
H5:CD	<b>Mediating role (CSE)</b>	AB	4.586	0.113	[0.075, 0.156]			
H6:CD	<b>Mediating role (SS)</b>	AB	1.748	0.056	[0.007, 0.109]			
<b>Control variables</b>								
Years working AB		1.749	2.272	-0.173	[-0.308 -0.007]	0.026	(Weak effect)	
Education AB		1.369	0.114	0.007	[-0.106 - 0.131]	0.000	(No effect)	
Ministry AB		1.781	4.693	-0.405	[-0.560 -0.247]	0.141	(Weak effect)	
Sex AB		1.193	0.623	-0.036	[-0.151 - 0.074]	0.002	(No effect)	
Age AB		1.550	1.308	0.095	[-0.075 - 0.217]	0.009	(No effect)	
<b>Overall fit</b>								
SRMR Saturated Model	0.065							
Estimated Model	0.079							

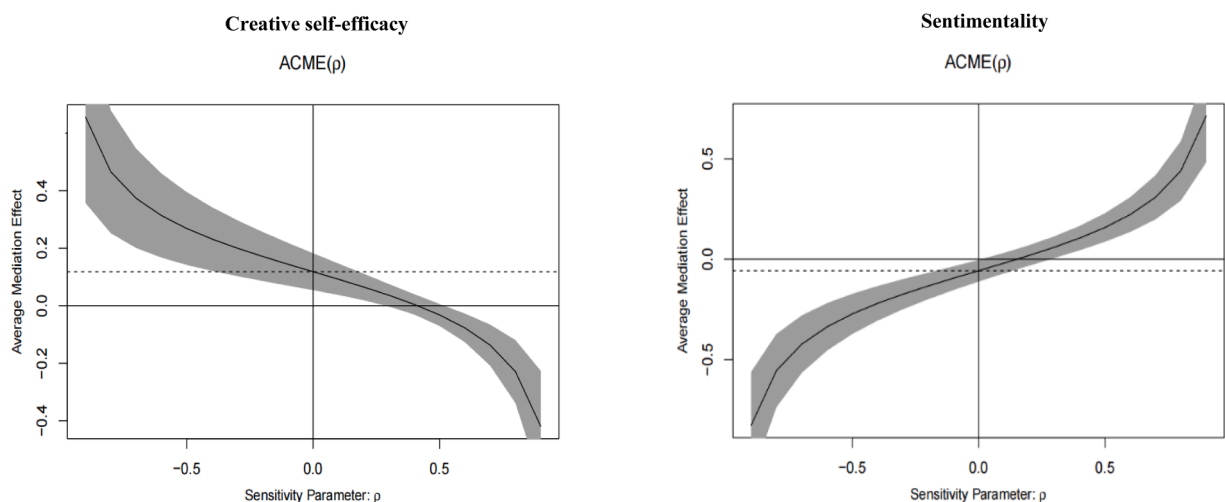
Notes. One-tailed test, \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

**Table 5**  
Analysis of indirect effects (mediation).

		Path Coefficient	Confidence Interval 95 %	t- Value	Decision
<b>Direct Effects</b>					
CD-AB		0.119	[-0.002, 0.221]	1.772	Direct relationship
<b>Specific Indirect Effects</b>					
H5:CD	Mediating role (CSE)AB	0.113	[0.075, 0.156]	4.585	Partial mediation
H6:CD	Mediating role (SS)AB	0.055	[0.007, 0.109]	1.748	Partial mediation

throughout its entire range are shown. All of this provides a visual representation of the robustness of the mediation against potential confounders or unobserved biases.

Finally, the gray background represents the confidence interval for the indirect effect, regardless of the value of  $\rho$ . The results of the analysis confirm that the mediated effect of creative self-efficacy is robust to low levels of unobserved confounders, remaining stable up to a threshold of  $\rho = 0.4$ . This suggests that the influence of creative self-efficacy in the mediation is consistent. On the other hand, the sensitivity analysis for the mediator sentimentality reveals that it is susceptible to unobserved confounding factors, with the mediated effect remaining stable up to  $\rho = 0.2$ . These representations clearly allow us to visualize the robustness and sensitivity of each



**Fig. 3.** Sensitivity analysis of the mediators.

mediation to potential omitted variables. Together, these results validate the presence and importance of both mediations in the model."

## 5. Discussion

This exploratory study has produced results significant for research on the public sector. First, it attempted to understand the positive effect of perceived cognitive diversity on creative self-efficacy in public sector employees. By responding to the call in the literature to study the antecedents of creative self-efficacy, we theorized that perceived cognitive diversity promotes creative thinking and is thus fundamental to strengthening creative self-efficacy. That is, perceived cognitive diversity provides diverse cognitive resources to generate creative ideas (Shin et al., 2012) at work. Second, the results classify perceived cognitive diversity as a negative factor in development of sentimentality in the employee. On the one hand, perceived cognitive diversity tends to hinder emotional connections (Chen et al., 2019; Nguyen et al., 2022). We observe that, the more diverse employees are, the less they develop traits of sentimentality.

Third, our findings show, that creative self-efficacy has a positive effect on development of public employees' ambidextrous behavior. While creative self-efficacy usually fosters exploitative and exploratory ideas (Caniëls et al., 2017; Farmer & Tierney, 2017), sentimentality does not, as shown by the negative effect obtained. That is, the more employees develop sentimentality, the less ambidextrous their behavior becomes. We believe this occurs because sentimental individuals are more likely than others to activate the part of sentimentality related to attachment to the past and thus to what already exists in the organization. Poorly managed sentimentality does not enable focus on both of the dimensions required to achieve ambidextrous behavior (Leonard-Barton, 1992).

Finally, the direct relationship between cognitively diverse employees and their ambidextrous behavior is partially mediated by creative self-efficacy and sentimentality. This result is valuable for public administration because it shows that employees with creative self-efficacy can apply their useful traits to explore and exploit, despite perceiving cognitive diversity in their colleagues.

Although the literature might seem to understand the phenomenon of employee sentimentality fully, this is not the case. Our study presents empirical evidence of sentimentality's partial mediation in the relationship between perceived cognitive diversity and employee ambidexterity. This finding can be explained by theorizing that the presence of sentimental traits helps employees to understand and accept the differences between different employees. Research shows that conflicts decrease and the work environment improves when people understand and accept differences. Although perceived cognitive diversity has a direct positive effect on ambidexterity, we cannot ignore employees' sentimental traits. Proper management of sentimentality thus helps to achieve a greater effect to improve this relationship. Although they have a weak mediating effect, it is important to manage this effect to prevent problems that might hinder ambidextrous development, as shown in H4. Further, sentimental employees create respect for what is different and ultimately acceptance of diversity. This phenomenon translates into working together to achieve common goals, which can be vital for the development and success of employees' ambidexterity. Sentimentality can also help employees to be more aware of their prejudices and work to overcome them, actions useful for ensuring that perceived cognitive diversity is exploited to the maximum to achieve ambidexterity. Sentimentality developed as a mediator between diversity and ambidexterity fosters sentimentality as a valuable tool and enables correction of potential problems caused by this trait in the public administration environment.

### 5.1. Theoretical implications

The implications for self-efficacy and TAT presented in this study derive from our theoretical framework. This framework enabled us to propose the influence of employees' creative self-efficacy and sentimentality on public employees' ambidextrous behavior based on their perceived cognitive diversity. The findings have several important theoretical implications. First, prior mixed findings led academics to call for empirical research on the negative and positive effects of perceived cognitive diversity on variables of results (Chen et al., 2019; Kim et al., 2021). Our study attempts to fill this gap by broadening the concept of perceived cognitive diversity in consonance with other variables (sentimentality, creative self-efficacy, and ambidextrous behavior). We identified the mediating characteristics of the variables creative self-efficacy and sentimentality and found that both partially mediate the context of perceived cognitive diversity in its relationship to ambidextrous behavior.

Second, this study contributes to the literature on ambidexterity by stressing ambidexterity's utility in public administration. Much research studies ambidexterity in leaders or directors of private organizations. Fewer studies focus on the employee, and even fewer on public organizations. Further, the main studies of the public sector focus on risk analysis, transparency, and public budget. Our study thus answers the literature's call for more research on ambidexterity in the public sector, especially on employees (Smith & Umans, 2015). To achieve this goal, we have demonstrated empirically that cognitively diverse public organizations can implement ambidextrous behavior by tapping the benefits of their diversity, while not ignoring self-efficacy and traits of sentimentality in their employees. Prior research has also identified the significance of mediating variables as a key factor in achieving ambidexterity (Alkhawaldah et al., 2021; Li et al., 2018). Our study supports and enriches these results. Finally, our results advance prior research by showing that public organizations can follow multiple paths to become ambidextrous even though these organizations' context and goals differ from those of private ones. There is thus no "one solution or one way" to achieve ambidexterity (Agostini et al., 2016). Our findings support this argument.

### 5.2. Practical implications

Our findings have the following practical implications.

Public organizations are composed of cognitively diverse employees who perform their tasks daily. Incorporating analysis of sentimentality and creative self-efficacy into study of this diverse environment is extremely important for efficient results in achieving ambidextrous behavior. The individuals responsible for managing public organizations must strengthen development of must strengthen activation of these traits of behavior in their employees in order to achieve more efficient administrations. These managers should know their employees' level of sentimentality and creative self-efficacy. Handling employees' dissonant ideas and different perspectives constructively encourages development of exploration and exploitation, but one cannot foster ambidexterity in the same way in all employees. Rather, managers must attend to their employees' levels of sentimentality in an individualized way. They might include tests during personnel selection processes to detect abilities and personality traits, as sentimental employees and those with creative self-efficacy help to decrease the negative role of perceived cognitive diversity in achieving ambidexterity.

This result identifies a new opportunity for developing and managing public employees. It provides tools for managing paradoxes, especially of perceived cognitive diversity and sentimentality, to achieve ambidexterity for public employees' better adaptation to today's complex conditions of diversity. Because public administrations are constantly seeking to be more efficient and innovative to overcome challenges and change, their success goes hand in hand with their managers' capability to go beyond their formal work and manage personnel properly through management of personality traits. One way to achieve this goal is to propose developing ambidexterity in employees, while fully accepting their diversity.

### 5.3. Future research directions

This research used cross-sectional empirical data, which prevents us from drawing cause-and-effect conclusions. Although the evaluated research model is novel and explanatory, it does not establish causal relationships but allows for the acceptance or rejection of the proposed hypotheses supported by empirical evidence.

Future research could utilize longitudinal designs to help test cause-and-effect patterns, providing additional information on potential causes, i.e., allowing for causal inferences in a more direct way.

Our findings were framed within a specific context, so it must be considered that the variables analyzed have the potential to change over time. Therefore, longitudinal designs could be leveraged to examine alternative causal patterns. For example, longitudinal designs would allow researchers to test whether public employees who have the opportunity to demonstrate ambidextrous behaviors have a high level of creative self-efficacy and sentimentality over time, in order to determine potential changes.

On the other hand, future research could also conduct case or experimental studies that provide a more comprehensive understanding of a problem beyond improving the predictions made in this research. For example, a controlled, randomized experiment could be implemented, where cognitive diversity is manipulated through designed tasks to induce different levels of diversity among the various groups created. This would allow the analysis of how employees with different levels of cognitive diversity work together, while measuring the role of sentimentality and self-efficacy in achieving ambidextrous behavior. These experimental approaches would allow testing the mediating role of sentimentality and creative self-efficacy more robustly, overcoming the limitations of purely longitudinal studies and providing more convincing causal evidence.

Understanding the causes that lead to ambidextrous behavior is crucial for managing public employees and improving public administration. Moreover, understanding the contribution of each variable (cognitive diversity, sentimentality, and creative self-efficacy) to public employees' ambidextrous behavior not only helps develop specific strategies to foster such behavior but is also crucial for decision-making and effective planning in administrations. Traditional research primarily focuses on correlation-based analysis without the ability to reveal underlying causal mechanisms. To date, no study has considered the complex causal relationships between perceived cognitive diversity, sentimentality, and employees' creative self-efficacy, nor has it quantified their contributions to ambidextrous behavior outcomes.

### CRediT authorship contribution statement

**Paola S. Arce-López:** Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Danielis Cabeza-Pullés:** Writing – review & editing, Validation, Supervision, Methodology, Formal analysis, Data curation, Conceptualization. **Antonia Ruiz-Moreno:** Writing – review & editing, Validation, Supervision, Resources, Project administration, Investigation, Funding acquisition, Formal analysis, Conceptualization. **Teresa Ortega-Egea:** Writing – review & editing, Validation, Software, Resources, Project administration, Formal analysis.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Acknowledgements

This research was supported by:

1. The FEDER Operational Program 2014–2020/Junta de Andalucía-Ministry of Economy and Knowledge/ Project A-SEJ-196-UGR20 and Project B-SEJ-74-UGR20.
2. Governments of Spain and Andalusia, and the European Regional Development Fund (European Union) (Research Project



PDI2021–124396NB-I00). \* Funding for open access charges: University of Granada / CBUA.

## Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.tsc.2025.101856](https://doi.org/10.1016/j.tsc.2025.101856).

## Data availability

Data will be made available on request.

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