

Article

Structural Impacts on Formation of Self-Efficacy and Its Performance Effects

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Abstract: The role of organizational structure as an important contextual variable has long been recognized in affecting a host of employee attitudes and behaviors, but there is a dearth of theoretical and empirical research that examines the ways in which organizational structure influences the occurrence of self-efficacy and its performance effects. This study addresses this gap by exploring how the two core structural components—formalization and centralization—separately and jointly affect employee self-efficacy and how they interact with self-efficacy to influence employee task performance. The study further examines the extent to which structure weaves its influence on individual performance through perceptions of self-efficacy. Data from 120 Pakistani public sector employees were analyzed using partial least squares structural equation modelling (PLS-SEM) and polynomial regression to assess the hypothesized relationships. The empirical analysis shows that formalization is positively associated with self-efficacy while centralization has a negative association, and such an improvement/attenuation in self-efficacy is partly transformed into performance improvements. The findings further reveal that self-efficacy and performance relationship is diminished under conditions of high formalization and high centralization. We discuss implications for theory and practice and delineate directions for future research.

Keywords: organizational structure; formalization; centralization; self-efficacy; task performance; social cognitive theory

1. Introduction

Research has long recognized the importance of an individual's self-efficacy in his/her ability to sustain performance [1–4]. It has been argued that individuals who perceive themselves as possessing high self-efficacy believe in their own abilities to execute a target behavior and endure challenging experiences as they strive toward goal achievement [5,6]. They tend to exert more effort and persist longer during work, thereby sustaining performance levels until the desired results are achieved [7]. The beneficial effects of an individual's self-efficacy are not only limited to the sustainability of his/her performance, but it has also been argued to have positive group level effects such that teams comprised of members with high efficacy perceptions exhibit greater levels of sustainability [8]. At the same time, researchers have increasingly acknowledged that perceptions of efficacy are not formed within a virtual vacuum, but are subject to important contextual influences. As a result, much has been written about the role of contextual factors in the occurrence of self-efficacy beliefs. For example, several contextual variables, such as co-worker trust [9], supportive work climate [10–12], access to job

resources [13–15], high-performance managerial practices [12,16], and transformational leadership [17] have been reported as antecedents of perceived self-efficacy. Subsequent researchers have further identified several job/task characteristics—such as task control, task complexity, task enrichment, and task identity and significance—as contextual antecedents influencing employees' perceptions of self-efficacy [9,18–21]. Investigations into these various antecedents have yielded important insights into the relationship between organizational context and self-efficacy, but such studies have been rather narrow, limiting themselves to specific aspects of organizational context. Organizational structure, which is an important element of organizational context [22–24], has generally been overlooked in empirical research even though prior theoretical assertions refer to the role of structural factors in the formation of efficacy perceptions [25,26].

Nonetheless, there are a few studies that have tried to link structural aspects of the work environment to efficacy beliefs (e.g., [27–30]). These studies, however, have certain deficiencies. For example, Biron and Bamberger [28] and Ahearne et al. [27] examine the degree to which structural characteristics influence self-efficacy and individual performance in their respective studies, but these studies focus on the structural impacts of a specific structural element such as empowerment. Empowerment as a structural construct offers an inadequate representation of organizational structure because it only parallels micro-level centralization/decentralization [31]. It is argued that considering different structural facets (e.g., formalization and centralization) offers a deeper and more differentiated understanding of the role of organizational structure [32]. Furthermore, Ahearne et al. [27] capture structural empowerment by measuring leadership-empowering behaviors instead of capturing it as a stable structural characteristic.

Apart from the above, there are a few other research attempts [9,15,18,19,33] that have linked self-efficacy to autonomy (a concept synonymous to structural empowerment), but the focus on autonomy in these studies is specific to a single task/job rather than how the structure of an organization creates a broader milieu boosting or limiting task control related to all job types. Other closely related studies are that of Kirkman and Rosen [29] and Seibert et al. [30], which have demonstrated how structural characteristics are likely to shape the sense of being empowered. However, these studies use a different conceptualization of structure to that employed in sociology and organization theory literature. The concept of structure has a very well developed meaning in this literature, and researchers typically apply at least two core elements to describe the structure of an organization: formalization and centralization [34]. In addition, these authors link structure to potency and psychological empowerment respectively, both of which are distinct constructs compared to self-efficacy. Consequently, no published studies could be located that have examined the impact of different elements of organizational structure on self-efficacy.

Second, although self-efficacy has been examined as an explanatory mechanism of structural elements on employee outcomes (e.g., performance), such attempts have been rare. Moreover, these studies offer an incomplete picture of these relationships because (1) they focus on a single structural element when analyzing self-efficacy (e.g., [15,33]), and hence we do not know whether the variables have unique effects or which are the most important; and (2) the findings of such research attempts have been inconsistent (e.g., [27,28]). Thus, research on the extent to which structure weaves its influence on individual performance through perceptions of efficacy is still scarce and speculative. Furthermore, there is a lack of empirical information on whether a combination of different structural variables (e.g., formalization and centralization) works synergistically such that the presence of either condition bolsters or weakens the influence of the other, and whether organizational structure acts as a boundary condition for the effects of self-efficacy on task performance. This warrants more research to reach a better understanding of the structural impacts on the development of self-efficacy and its performance effects and to help organizations to effectively manage the cognitive resources (i.e., self-efficacy) of their employees.

The current study contributes to the existing literature in the following ways. First, our conceptualization of structure builds on the traditional view of organizational structure, which

identifies formalization and centralization as two core structural components. The individual effects of formalization and centralization on employee self-efficacy have been implicit in the literature but, to our knowledge, this has never been made theoretically explicit and subjected to an empirical test, as has been done in this study. Second, we hypothesize a mediating role for self-efficacy in the relationship between structural elements and individual level performance in our model. Third, we examine whether formalization and centralization jointly influence the occurrence of self-efficacy. Finally, we consider the moderating role of formalization and centralization in the relationship between self-efficacy and task performance. Thus, our study provides an in-depth understanding of how employees' self-assurance about their capacity to perform a behavior and their ability to sustain performance is influenced by the structural characteristics of formalization and centralization.

2. Theoretical Background

In this section, we first define the primary constructs in our conceptual model, and then explain how social cognitive theory (SCT) lays the theoretical grounding for this study.

2.1. Organizational Structure

Although it is acknowledged that organizations comprise many structural components, formalization and centralization have been identified as the two main dimensions of organizational structure [35–37]. Formalization refers to the extent to which clearly defined rules, standardized policies, and procedures are instrumental in governing decision-making and working relationships in organizations [38]. Centralization relates to how power is distributed in an organizational hierarchy and whether employees are encouraged to participate in decision-making [31,38]. Formalization and centralization tend to have differing effects on individuals in organizations [36], so considering these dimensions individually may contribute to a more differentiated understanding of the role of organizational structure [39].

These conceptualizations of structure are relevant to large organizations as well as to small groups such as work units because all human enterprises, irrespective of their size, face the same basic problems of dividing and coordinating labor [40]. According to earlier assertions, organizations as well as the units within them need to instill such practices and procedures to ensure consistency, efficiency, and control [41–43]. In this paper, we specify formalization and centralization as work unit-level constructs. Such a conceptualization of structure at a meso-level is consistent with past research on structure in organizations that has been conducted on smaller units and workgroups [12,36,40].

2.2. Self-Efficacy

Self-efficacy refers to an individual's belief in his or her capabilities for accomplishing a particular task [6], which then encourages effective work behavior such as higher job performance [44]. Bandura [5,45] identifies four sources of information that influence self-efficacy: enactive mastery, vicarious learning, verbal persuasion, and emotional arousal.

Self-efficacy is distinct from other conceptually related constructs such as potency, psychological empowerment, and self-esteem in several ways. For example, potency as compared to self-efficacy is a team-level construct, which refers to the generalized collective belief of a team about its effectiveness [46,47]. Likewise, self-efficacy is a unitary construct that is captured by a single concept, while psychological empowerment is a broad and multifaceted construct that is composed of four cognitions: meaning, competence, self-determination, and impact [48,49]. The cognition of competence is argued to be synonymous with self-efficacy, though self-efficacy has emerged as a distinct and independent motivational concept in the literature, beyond a sub-dimension of the psychological empowerment construct [18,50,51]. Self-efficacy is also distinct from self-esteem. Self-esteem is a generalized estimate of one's positive evaluation while self-efficacy is specific to work.

2.3. Structure–Self-Efficacy–Performance: A Social Cognitive Theory Perspective

Research in organizational behavior has long focused on the relationships between the properties of organizational structure and employee reactions to their work, but a few studies have explained these relationships by employing different conceptual models. One explanation for performance implications of organizational structure has been provided using an attraction-selection framework [52,53]. An alternative explanation for understanding the relationship between organizational structure and practices and employee reactions has been provided by employing the job characteristics model [39,54]. Other frameworks have also been advocated for specifying how structural properties influence individuals in organizations; these are the demands–constraints–choices model [55], psychological empowerment theory [12] and social exchange theory [56,57]. However, except for psychological empowerment theory, none of these theories address self-efficacy as a mechanism through which elements of the organizational structure drive or leverage performance outcomes. For example, the job characteristics model incorporates the cognitions of meaning and self-determination but not competence or feelings of self-efficacy. Even psychological empowerment theory does not specifically address the process of self-efficacy through which structural elements may translate into improved performance. This is because it uses psychological empowerment as a unitary construct of four cognitions or psychological states, with competence as one of the cognitions that is analogous to Bandura's [6] self-efficacy.

SCT provides a basis for theorizing about the roles of formalization and centralization as antecedents of self-efficacy and moderators of their performance effect, as well as self-efficacy as a mediating mechanism between structure and individual performance. Earlier research attempts to integrate structural and psychological empowerment (e.g., [27–29]) have largely built upon SCT [5,58], but these studies have not offered proper explications for the relevance and choice of this theory.

According to SCT, self-efficacy is one of the critical cognitive factors that is influenced by one's environment. However, the question that arises here is whether the structural aspects of an organization/work unit create a work environment and whether such a work milieu/context has the capacity to influence the formation of an employee's efficacy beliefs. The answers to both parts of this question are implicit in the earlier literature. For example, Pettigrew [23] argues that the internal organizational context focuses on broad and relatively stable categories of organizational characteristics such as structure and culture, which constitute an environment where organizational activities take place [59]. Likewise, Cardy and Dobbins [60] classify organizational structure as a system/environmental factor in an organization. According to Korman [61], the term "environment" refers to both social and physical environmental factors, and work structures represent social environmental factors.

The influence of organizational structure as a work environmental factor on employee self-efficacy is also supported by earlier research. Conger and Kanungo [25] argue that organizational bureaucratic practices diminish employees' feelings of self-efficacy by creating a work setting characterized by inequitable power distribution. Likewise, Block [62] and Kanter [63] suggest that bureaucratic and authoritarian contexts lead to lower employee efficacy by fostering a sense of powerlessness. It has been argued that a structural context that affords greater discretion related to one's tasks and encourages participation in decision-making helps employees discover their competencies [12,64], thus strengthening their self-efficacy.

Bandura [5] describes individuals as personal agents who have the capacity for self-reflection to successfully address performance challenges. The author, however, argues that human functioning is socially situated, and the motivation of individuals to perform tasks is related to the situational support available to the human agents. This means that how individuals feel about themselves is important to completing the work successfully, but this is influenced by their perception of the availability of resources/situational support that may contribute to or constrain effective performance [65,66]. This is consistent with earlier research that suggests that organizational structure may influence the effectiveness of certain behaviors by facilitating or restricting opportunities [32].

3. Hypotheses Development

We suggest that organizational structure creates a work context that can promote or constrain members' self-efficacy perceptions, which in turn will affect employee performance. We consider formalization and centralization as two distinct aspects of organizational structure and examine their separate and joint influences on self-efficacy beliefs (see Figure 1). We further posit that formalization and centralization may act as boundary conditions for the influence of self-efficacy on task performance.

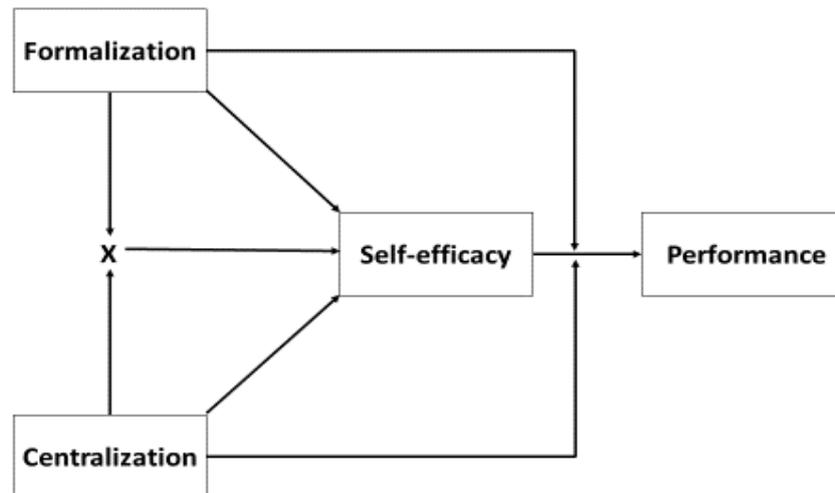


Figure 1. Conceptual model.

3.1. Formalization and Self-Efficacy

Earlier research presents two different views regarding the effects of formalization on employees. According to the negative view, formalization fosters dissatisfaction and demotivates employees by coercing effort and compliance. The positive view suggests that formalization eases role stress and helps individuals be and feel more effective by providing needed guidance and clarifying responsibilities [67]. In this study, we embrace an enabling view of formalization.

We propose that a formalized environment may nurture employees' self-efficacy in the following ways. First, formalization contributes to role clarity for organizational members [68] by outlining what role incumbents are required to take at work, how they are supposed to perform their tasks and how they will be evaluated (e.g., [69]). Many past studies support this notion by showing that a clear understanding of what is expected of employees at work fosters efficacious beliefs [70–72]. For example, Block [62] and Kanter [63] argue that employees' beliefs in personal efficacy suffer when their jobs lack role clarity. Work environments with little formalization offer little information as to how employees can demonstrate competence in relation to their peers because they offer little clarity about the appropriate ways to engage with the job [36]. Furthermore, by making goals and objectives explicit, formalization provides information about performance norms and future expectations, which enable employees to compare their own capabilities against a standard. It has been argued that providing normative information on performance levels related to a task tends to raise the levels of self-efficacy [73] by making certain performance levels more cognitively salient compared to others through a priming or attributional effect [74]. This echoes Bandura's [6] assertion that the development of self-efficacy beliefs through mastery experiences needs to have a standard that may serve as a parameter with which to measure and compare one's actual performance on a given task.

Second, formalization shapes the structure and scope of interactions [75] by providing guidelines related to the frequency of contacts and the amount and type of information to be exchanged [39], which is likely to facilitate a uniform and structured process of information exchange between leaders and followers. This suggests that a formalized structure will improve the availability of feedback regarding one's performance on a particular task in a form that will be helpful in comparing performance against

a standard or goal. Task feedback on an individual's abilities can influence his/her self-efficacy by offering competence-enhancing information [6,76], but such information tends to be useful when the feedback provided is perceived as credible and trustworthy [45]. Since it is argued that formalization improves the perceptions of fairness and protection from the arbitrary exercise of power [77], feedback on actual performance allows employees to better assess their competence and the impact they have on influencing organizational outcomes.

Third, formalization may allow an organization to devote its resources to a shared goal that can facilitate cooperation and collaboration among the organizational members [78]. Thus, a formalized structure seems to foster an environment that may be conducive to promoting a feeling of inclusion and empowerment. Earlier research posits that a sense of inclusion and personal control nurtures perceptions of self-worth in employees [79,80]. Finally, research indicates that formalization supports the formation of positive attitudes—such as trust in the fairness of processes [81], organizational identification and commitment [82–84], and job satisfaction [85]—by reinforcing predictability and role clarity. Employees' positive attitudes at work may provoke a constructive psychological process, which in turn may positively influence how a person feels about his/her personal abilities.

The above reasoning suggests that formalization can influence self-efficacy positively, which provides the basis for the following hypothesis:

Hypothesis 1 (H1). *Formalization has a positive relationship with self-efficacy.*

3.2. Centralization and Self-Efficacy

Centralization may constrain the formation of self-efficacy beliefs among employees. A centralized structure may offer employees limited autonomy in their day-to-day activities [86], restricting their ability to make decisions, to work on challenging tasks and make use of their competencies. Thus, control at work is low and performing work tasks provides little information about one's personal effectiveness. Earlier evidence suggests that offering opportunities to exercise self-direction and self-control contributes to employees' feelings of self-worth [87,88]. In a study on school teachers' self-efficacy, Moore and Esselman [89] found that teachers who experienced more autonomy in making decisions on matters related to their own classrooms developed a high sense of self-efficacy. In contrast, adopting an authoritarian style of management may undermine and impair employees' sense of competence and self-image [90]. It has been argued that using authoritarian and domineering styles of management, such as imposing strict controls and hierarchy, implies lack of trust in employees' abilities [91,92]. Such implicit views concerning lack of competence tend to be internalized by employees, and this becomes part of their self-construal as a form of an internal evaluation standard [5]. On the other hand, when individuals are empowered, their personal efficacy expectations are strengthened because empowering means enabling, and it implies raising subordinates' convictions of their own effectiveness [25].

In addition, centralized organizations exclude members from participating in important decisions [93]. Centralization thus engenders work alienation among organizational members [94] and impairs their job satisfaction [84] and perceptions of justice [56,57]. Employees holding these negative attitudes may show a lower degree of involvement with organizational goals, and decisions adopted by top management play an insignificant role in engaging these employees emotionally. This in turn may trigger a negative psychological arousal in employees, leading to low-efficacy beliefs. On the other hand, participative practices in a decentralized context signal that employees are more likely to be acknowledged and recognized for their abilities; thus, participative practices allow employees to demonstrate their prowess and competence [36]. A decentralized setting facilitates positive attitudes by supporting and encouraging individuals' contributions and proactive engagement with work challenges [95,96]. A decentralized structure thus seems to foster a work climate where employees may show a greater degree of emotional engagement with organizational goals, and such psychological states can positively impact how an employee feels about his/her personal abilities [6].

Previous research suggests that centralized structures tend to hinder the development of perceptions of justice in organizational members [56,57]. Perceptions of a low level of fairness may cause employees to view with suspicion the standard used for performance comparison and the feedback about one's competence. Since feedback about task performance can play a role in raising efficacy beliefs if it is perceived as fair, feedback by managers in centralized settings may not enable individuals to identify and eliminate errors, thereby hampering the occurrence of self-efficacy. Moreover, managers' verbal persuasion in centralized settings may do little to motivate employees to perform a task at a certain level because of employees' negative attitudinal and emotional responses. In contrast, high levels of decentralization may encourage the participation of a higher number of individuals from different organizational levels in the process of decision-making [97], which may foster an environment that offers greater opportunities for vicarious learning through increased sharing of ideas, information and knowledge among organizational members [45].

Considering the above, we expect centralization to have a negative association with self-efficacy, as the following hypothesis suggests:

Hypothesis 2 (H2). *Centralization has a negative relationship with self-efficacy.*

3.3. Mediation Role of Self-Efficacy

The intervening mechanisms that have mainly been suggested to explain the paths of influence from organizational structure to employee outcomes are role stress [98,99] and psychological empowerment [48]. Role stress has been used mainly as an intervening state between formalization and attitudinal outcomes, while psychological empowerment is used to link the extent of structural empowerment (centralization) to employee behavioral outcomes (e.g., [12]). However, there are a limited number of studies that specifically focus on self-efficacy as a mediating mechanism [25], but even such studies do not offer a clear distinction between different structural components.

High-efficacy beliefs are believed to have the potential to enhance an employee's in-role performance as is evident from the positive effects of self-efficacy on improved employee performance in a wide variety of settings [13,100,101]. The importance of self-efficacy lies in an individual's perceived ability to complete a task required to produce given attainments, exert more effort and persistence during work, and learn how to cope with task-related obstacles [44]. Formalization and centralization may affect performance by harnessing the motivational forces of self-efficacy. As noted earlier, employees exposed to a formalized work structure are more likely to experience higher levels of self-efficacy, which in turn will increase their task performance, while centralization may impair employees' self-efficacy, leading to decreased performance. Adopting an authoritarian means of control may cause negative self-evaluations that may motivate employees to withhold their efforts when performing tasks. Employees who are offered opportunities to exercise self-direction and self-control tend to have more enactive mastery experiences because empowerment and autonomy give employees the opportunity to acquire new skills and master new responsibilities [19]. Consequently, we suggest the following:

Hypothesis 3 (H3). *Self-efficacy will partly mediate the relationship between formalization and centralization and employee performance.*

3.4. The Joint Effects of Formalization and Centralization on Self-Efficacy

So far, we have argued that formalization and centralization can each directly influence self-efficacy through separate means, but it is possible that the combination of formalization and centralization works synergistically such that the presence of either condition bolsters/weakens the influence of the other. Past research on organizational structure shows that the structuring of activities (formalization) and the concentration of authority (centralization) are not the same thing [102], and greater structure can reduce the need for hierarchical intervention [103], while high centralization attenuates the positive

effect of formalization by creating a rigid, inflexible, and autocratic environment [104]. This suggests that high formalization and high centralization may have contradictory effects on the occurrence of self-efficacy, while high formalization and low levels of centralization can become complementary variables in the improvement of efficacy beliefs.

Low levels of centralization may provide a context that may offer ample autonomy and discretion to organizational members [86]. There are more mastery experiences and consequently more opportunities for developing self-efficacy when organizations permit their members to exercise self-direction and self-control [89]. However, for the development of efficacy beliefs, a clear understanding of what is expected of employees at work (e.g., [70]) and fair and timely feedback on actual task performance is also important [6,105]. Formalization provides information about performance norms and future expectations, as well as feedback about one's personal effectiveness, which enables employees to make a comparison of their own capabilities and performance against a standard. Our prediction is consistent with many past studies. For example, Lin and Germain [106] suggest that the ideal firm structure would be one in which centralization is low and formalization is high. Likewise, it has been argued that firms that unify bureaucratic and post-bureaucratic elements by implementing high formalization and low centralization may be beneficial for employee work-related attitudes and behaviors [22]. Consequently, we suggest the following:

Hypothesis 4 (H4). *Formalization and centralization will have a joint interactive effect on self-efficacy, such that the greatest efficacy will occur when structure is more formalized but less centralized.*

3.5. Moderation by Formalization and Centralization

Additionally, formalization and centralization may function as moderators of self-efficacy effects on performance. Several scholars [107–109] argue that employees with positive self-evaluations rely more on their skills to perform their jobs, whereas individuals lacking self-confidence rely more on situational support. According to self-verification theory [110], changes in self-confidence occur because of self-discrepant feedback from an influential source when one lacks high levels of self-concept certainty. The same arguments can be extrapolated to show how high- and low-efficacy employees will react to the formalized and centralized work contexts. We argue that low self-efficacy employees may particularly benefit from lateral (formalization) or hierarchical (centralization) support to instill confidence in them. The well-designed rules and procedures in a formalized context may be of particular advantage for them in mastering their tasks and functioning better [67]. Alternatively, a hierarchical context in which leaders establish clear rules for behavior and offer information about subordinates' competence may also provide enough opportunities for low-efficacy individuals to show a higher degree of initiative. On the other hand, individuals with high self-efficacy are less likely to be dependent on external conditions and can influence things despite the lack of situational support [111]. Thus, self-efficacy will have a stronger impact on performance under low formalized and low centralized conditions than when formalization and centralization are high. Consequently, we suggest the following:

Hypothesis 5 (H5). *The relationship between self-efficacy and performance will be stronger when formalization is low.*

Hypothesis 6 (H6). *The relationship between self-efficacy and performance will be stronger when centralization is low.*

4. Methods

4.1. Participants and Procedure

Data for the study was collected from a public organization in Pakistan using a cross-sectional survey method. The organization comprises several branches, and each branch is distinct in terms of

its geographical coverage or functional focus. The branches are further divided into work units that are also different with respect to their role and size. Surveys were manually administered among 160 employees in 49 work units. The employees were part of non-managerial personnel such as technical assistants, clerical assistants, inspectors, and auditors. Out of 160 employees who participated, 133 returned the completed surveys. The final number of usable observations was 120. The mean age was 45.4 years (SD 7.7 years). In all, 91% of the respondents had further or higher education. Twenty percent of respondents reported 1–10 years of service, 25% had a tenure of 11–20 years, while the rest had worked for more than 20 years in the organization. The sample predominantly comprised male respondents, with women representing less than two percent, overall.

4.2. Measures

All the constructs were operationalized with items from earlier validated scales.

Formalization was assessed with four items based on Pugh et al. [102]. The scale captures the extent to which the work environment is governed by rules and procedures. Participants' ratings were based on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Centralization was measured with four items taken from Aiken and Hage [112,113]. The scale assessed the degree of hierarchical authority within the work unit. Participants ranked the items on a Likert-type scale that ranged from 1 (strongly disagree) to 7 (strongly agree).

Employee task-related self-efficacy was operationalized with four items from Riggs et al.'s [114] scale. Participants ranked the items on a Likert-type scale that ranged from 1 (strongly disagree) to 7 (strongly agree).

To operationalize individual performance, we adopted a five-item subjective measure of performance developed by Williams and Anderson [115]. According to Wall et al. [116], a subjective measure allows researchers to generalize the findings to a larger performance construct. Each employee rated his/her performance on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Asking respondents to rate their own performance is consistent with previous research (e.g., [117]).

We controlled for respondents' age, education, and tenure of service.

5. Analysis and Findings

5.1. Measure Validation

First, we evaluated the psychometric properties of the measures by conducting an exploratory factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.681, and Bartlett's test of Sphericity was significant at the 0.001 level, indicating that the dataset was appropriate for factor analysis.

Further analysis was made using SmartPLS 3.0 [118]. We chose partial least squares (PLS) due to its ability to handle small samples [119,120] (our sample size = 120) compared to covariance-based techniques and their relaxation with the assumptions about the distributional properties of the data [120,121]. Table 1 shows the factor loadings of the PLS analysis of the measurement model. The rule of thumb for accepting items is to have loadings of 0.70 or greater, although loadings of at least 0.5 are considered acceptable [121]. We assessed convergent and discriminant validity based on Fornell and Larcker [122]. The composite reliability values for all constructs exceeded the acceptable value of 0.7 [120]. Although Cronbach's Alpha values for centralization ($\alpha = 0.69$) and self-efficacy ($\alpha = 0.68$) were less than 0.7, it is known that Cronbach's Alpha tends to be underestimated in PLS analyses [120]. An average variance extracted (AVE) value of 0.50 indicates an acceptable level for convergent validity. The AVE by our measures ranged from 0.50 to 0.61 (see Table 2).

Table 1. Construct, indicators, and loadings.

Construct	Indicators	M	SD	Loadings
Formalization	Our work involves a large number of written rules and policies (Form1)	5.15	2.13	0.638 ***
	A “rules and procedures” manual exists and is readily available to us (Form2)	5.17	2.03	0.855 ***
	There is a complete written job description for most jobs (Form3)	4.71	2.32	0.905 ***
	The organization keeps a written record of nearly everyone’s job performance (Form4)	4.63	2.33	0.706 ***
Centralization	There can be little action here until a supervisor approves a decision (Cent1)	3.46	2.14	0.509 **
	Even small matters have to be referred to someone higher up for a final answer (Cent2)	3.18	2.21	0.593 ***
	I have to ask my boss before I do almost anything (Cent3)	2.98	2.04	0.858 ***
	Any decision I make has to have my boss’ approval (Cent4)	3.13	2.14	0.846 ***
Self-efficacy	I have confidence in my ability to do my job (Seff1)	3.43	1.80	0.710 ***
	There are some tasks required by my job that I cannot do well (Seff2)	3.67	1.85	0.723 ***
	When my performance is poor it is due to my inability (Seff3)	4.33	1.52	0.692 ***
	I am an expert at my work (Seff4)	4.30	1.34	0.707 ***
Job performance	I always complete the duties specified in my job performance (Jobp1)	6.08	1.16	0.810 ***
	I meet all the formal performance requirements of the job (Jobp2)	5.92	1.12	0.794 ***
	I fulfill all responsibilities required by my job (Jobp3)	6.20	0.81	0.816 ***
	I never neglect the aspects of the job that I am obligated to perform (Jobp4)	5.87	1.15	0.526 ***
	I never fail to perform essential duties (Jobp5)	5.52	1.93	0.729 ***

Note: # Based on 1000 bootstrapping samples; M = Mean; SD = Standard deviation; Significant at *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ (two-tailed).

Table 2. Reliability, average variance extracted, and discriminant validity coefficients.

	Cronbach’s Alpha	Composite Reliability	AVE	1	2	3	4
Formalization (1)	0.78	0.86	0.61	0.78			
Centralization (2)	0.69	0.81	0.52	−0.06	0.72		
Self-efficacy (3)	0.68	0.80	0.50	0.35	−0.35	0.71	
Job performance (4)	0.80	0.86	0.55	0.34	−0.05	0.44	0.74

Note: Bold numbers on the diagonal shows the square root of the AVE. Numbers below the diagonal represent the construct correlations.

Discriminant validity indicates the extent to which a given construct is different from other latent constructs. A comparison of the square root of the AVE (diagonal values) and the correlations among the constructs presented in Table 3 meet Fornell and Larcker's [122] criterion in support of discriminant validity. In addition, we used the heterotrait-monotrait ratio of correlations (HTMT) approach [123] where all the values were under 0.85, providing further demonstration of discriminant validity between any two of the variables under study.

Table 3. Path coefficient and VIF (n = 120) (PLS analysis).

Criterion	Predictor	Path Coefficient	t-Value #	VIF
Self-efficacy R ² = 0.29	Formalization	0.28	3.12 **	1.04
	Centralization	−0.40	4.02 ***	1.05
	Gender	−0.02	0.16	1.02
	Age	0.04	0.28	3.51
	Education	0.08	0.90	1.01
	Tenure of service	0.03	0.22	3.50
Job performance R ² = 0.35	Formalization	0.22	2.08 *	1.14
	Centralization	−0.07	0.63	1.28
	Self-efficacy	0.11	2.35 *	1.41
	Gender	0.30	1.05	1.02
	Age	0.32	1.97	3.52
	Education	0.12	1.28	1.02
Tenure of service	−0.02	0.09	3.50	

Note: # Based on 1000 bootstrapping samples; Significant at *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ (two-tailed).

5.2. Common Method Variance

Because the data for all model variables came from the same respondents at a point in time, common method variance (CMV) might have affected some of the hypothesized associations in the PLS path model. The marker variable is a suitable alternative technique to CMV (e.g., [124,125]). However, in this study we economized on the survey items to avoid respondent fatigue and assessed CMV by first using Harman's [126] single factor method, followed by the common method construct procedure [127]. According to the single factor method, CMV is present if a single factor emerges from the unrotated factor solution or one factor explains much of the variance in the variables. The rule of thumb is that if a single factor accounts for more than 50% of variance, then there is a higher probability that there exists CMV [128]. An exploratory factor analysis was conducted using unrotated principal component factor analysis. The first factor accounts for only 22.96% (<50%) of the overall variance. In the follow-up common method factor approach, we included all indicators used in the PLS path model. We compared the PLS-SEM results with and without the common method construct and found no significant differences in the estimated structural model path coefficients. This result suggests that common method bias is not a problematic issue for the study.

5.3. Structural Model Results

Assessment of the path coefficients was done by bootstrap analysis in SmartPLS3. Table 3 shows the results of the path results of the path analysis. In our proposed research model (Figure 1), we hypothesized relationships between organizational structure (in terms of formalization and centralization), employee self-efficacy, and job performance. We posited that a formalized structure enhances employee self-efficacy (H1), while a centralized structural context has the tendency to mitigate employee self-efficacy (H2). We found support for both hypothesized relationships (H1 and H2). The results show that formalization and self-efficacy are positively related ($\beta = 0.28$, $p < 0.01$, $t = 3.12$), whereas centralization has a negative association ($\beta = -0.40$, $p < 0.001$, $t = 4.02$) with self-efficacy.

We also explored the role of self-efficacy as a mediating mechanism between the two dimensions of organizational structure and job performance. Results of the mediation analysis show support for

H3 that proposes an indirect effect of organizational structure on job performance via self-efficacy (see Table 4). Self-efficacy partially mediates the effect of formalization on job performance and similarly for the effect of centralization.

Table 4. Indirect effects.

Association	Indirect Effect	t-Value #	Mediation Type
Centralization → Self-efficacy → Job performance	−0.19	3.02 **	Partial
Formalization → Self-efficacy → Job performance	0.14	2.88 **	Partial

Note: # Based on 1000 bootstrapping samples; Significant at ** $p < 0.01$ (two-tailed).

5.4. Post-hoc Evaluation

To establish firm associations between our variables of interest and to test for the other hypotheses (H4, H5, and H6), we also conducted post-hoc analysis based on polynomial regression and response surface analysis [129]. The benefit of this analytic approach allows for a three-dimensional view of the relationship between combinations of two predictor variables (e.g., centralization and formalization) and an outcome variable (e.g., self-efficacy). The results are presented in Tables 5 and 6. The interaction of formalization and centralization on employee self-efficacy was found to be significant and negative ($\beta = -0.50$, $p < 0.001$). Hence, H4, which states that formalization and centralization will have a joint interactive effect on self-efficacy is supported. H5, which states that the relationship between employee self-efficacy and job performance will be weaker when formalization is high, is supported ($\beta = -0.37$, $p < 0.01$) (Table 6, model 2). Similarly, H6, which states that the relationship between employee self-efficacy and job performance will be weaker under conditions of high centralization was also supported ($\beta = -0.26$, $p < 0.01$) (Table 5, model 3).

Table 5. Regression results (n = 120).

	Model 1 Dependent Variable: Employee Self-Efficacy		Model 2 Dependent Variable: Job Performance		Model 3 Dependent Variable: Job Performance	
	B	SE	B	SE	B	SE
Constant	3.56	2.91	1.95	1.68	2.10	1.72
Gender	0.18	0.53	−0.31	0.32	−0.20	0.31
Age	0.01	0.90	1.21 *(0.19)	0.52	1.17 *(0.19)	0.53
Education	0.04	0.11	0.06	0.07	0.05	0.07
Tenure of service	0.07	0.22	−0.11	0.13	−0.11	0.13
Formalization (F)	0.31 ***(0.43)	0.08	0.04	0.06	0.11 ***(0.18)	0.04
Centralization (C)	0.12	0.08	−0.03	0.04	0.03	0.04
Self-efficacy (SE)			0.49 ***(0.62)	0.08	0.22 ***(0.28)	0.06
F X C	−0.16 ***(−0.50)	0.03				
F X SE			−0.16 ** (−0.37)	0.06		
C X SE					−0.08** (−0.26)	0.03
F ²	−0.05	0.03	0.06	0.03		
C ²	0.02	0.03			−0.01	0.02
SE ²			−0.03	0.06	−0.09*(−0.18)	0.04
Adjusted R ²	0.76		0.88		0.87	

Note: Significant at *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ (two-tailed test), B values are unstandardized while B values in brackets are standardized; Age and Tenure of service were transformed into natural logarithm before further analysis.

Table 6. Testing slopes and curves (n = 120).

Effect	Model 1			Model 2			Model 3		
	B	SE	t-Value	B	SE	t-Value	B	SE	t-Value
a1: Slope along $x = y$ (as related to Z)	0.43 ***	0.07	6.35	0.53 ***	0.05	10.28	0.26 ***	0.07	3.86
a2: Curvature on $x = y$ (as related to Z)	−0.19 **	0.06	3.29	−0.130 ***	0.04	3.65	−0.18 ***	0.01	18.4
a3: Slope along $x = -y$ (as related to Z)	0.19	0.14	1.32	−0.460 ***	0.14	3.34	−0.19 **	0.07	2.77
a4: Curvature on $x = -y$ (as related to Z)	0.14 *	0.06	2.44	0.180 **	0.07	2.52	−0.02	0.06	0.35

Note: Significant at *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ (Two-tailed test).

Figures 2–4 show graphical presentations based on response surface analysis. Figure 2 shows a three-dimensional representation of employee self-efficacy as explained by formalization and centralization. Increasing levels of formalization lead to increasing levels of employee self-efficacy at low levels of centralization. Similarly, increasing levels of centralization lead to increasing levels of employee self-efficacy at low levels of formalization. However, increasing levels of formalization lead to decreasing levels of employee self-efficacy when centralization is very high and vice-versa (that is, increasing levels of centralization lead to decreasing levels of employee self-efficacy when formalization is very high). Figure 2 also shows that increasing levels of both centralization and formalization lead to increasing levels of employee self-efficacy up to a point, and beyond that point self-efficacy decreases. A test of the slopes and curves of the models is shown in Table 6.

Figure 3 shows job performance as explained by employee self-efficacy and formalization. At low levels of formalization, increasing levels of self-efficacy lead to higher job performance. This positive linear relationship, however, changes to a negative relationship at higher levels of formalization. A test of the curvature and linearity of the relationship between formalization and self-efficacy in relation to job performance (see Figure 3) shows significant associations in all four situations (see also Table 6). Thus, when the extent of formalization agrees with the level of self-efficacy, this has a linear effect on performance such that increasing levels of both formalization and self-efficacy lead to increasing levels of job performance. The significance of the curvature ($x = y$ in relation to z, see Table 6) also demonstrates the “balanced” effect of formalization, and self-efficacy reduces after a point, leading to some form of diminishing effect. The discrepancy between the extent of formalization and employee self-efficacy also has a significant effect on job performance, as shown by the test of significance of the linearity and curvature ($x = -y$ in relation to z, see Table 6). Job performance is highest at high levels of self-efficacy and low levels of formalization. However, job performance “suffers” as self-efficacy reduces at the expense of increasing levels of formalization.

The effect of self-efficacy on job performance was also found to be curvilinear ($SE^2: \beta = -0.18$, $p < 0.05$) (recall Table 6, Model 3). A graphical representation of the joint effect of self-efficacy and centralization on job performance is shown in Figure 4. At low levels of centralization, the association between employee self-efficacy and job performance is curvilinear. However, at low levels of self-efficacy, increasing levels of centralization lead to increasing levels of job performance. In contrast, at high levels of self-efficacy, increasing levels of centralization lead to a reduction in job performance. A test of linearity ($x = y$ in relation to z, see Table 6) also shows that when centralization and self-efficacy are in agreement, this has a significant linear effect on performance. However, the discrepancy between the extent of centralization and self-efficacy has a significant impact on job performance. Therefore, the inhibiting influence of centralization on job performance becomes more pronounced when employees are at their highest levels of self-efficacy.

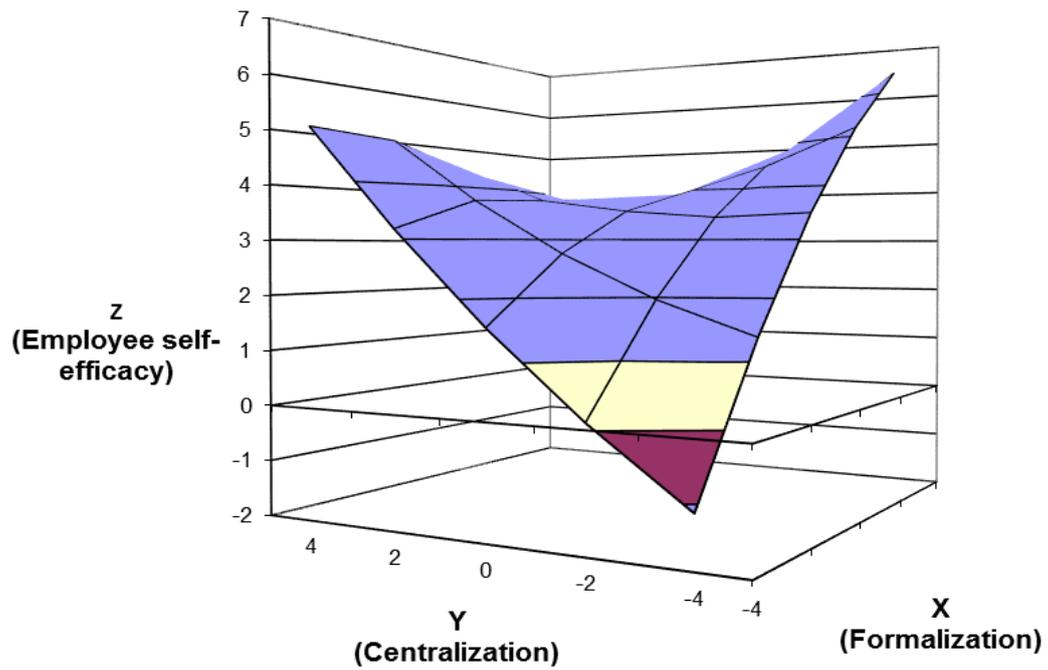


Figure 2. Self-efficacy as explained by formalization and centralization.

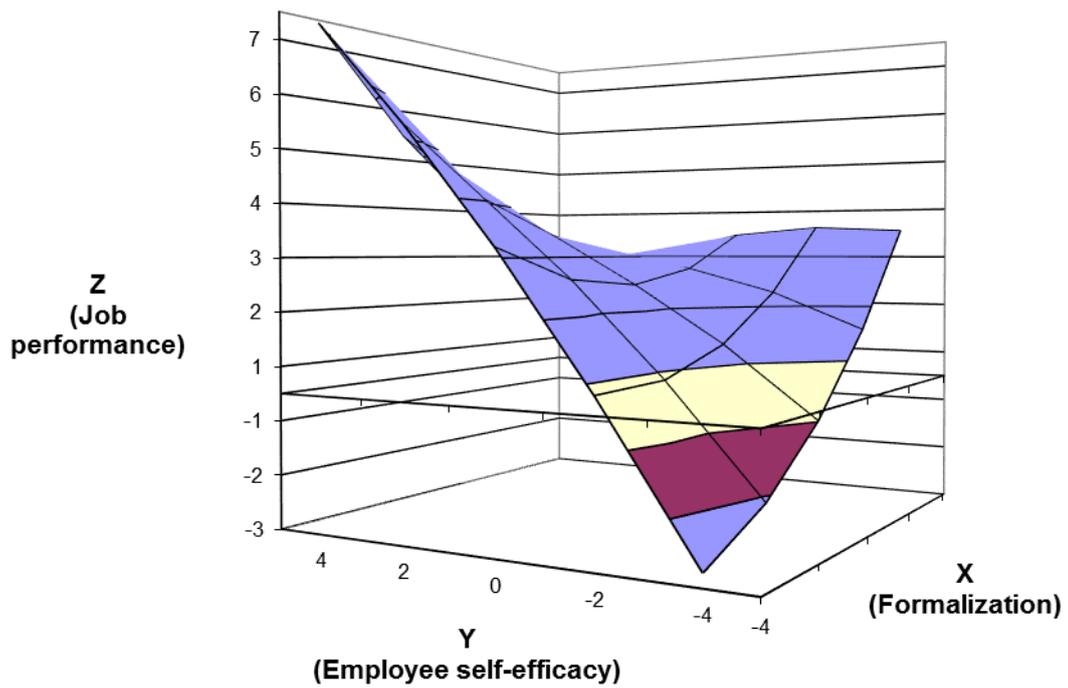


Figure 3. Job performance as explained by formalization and self-efficacy.

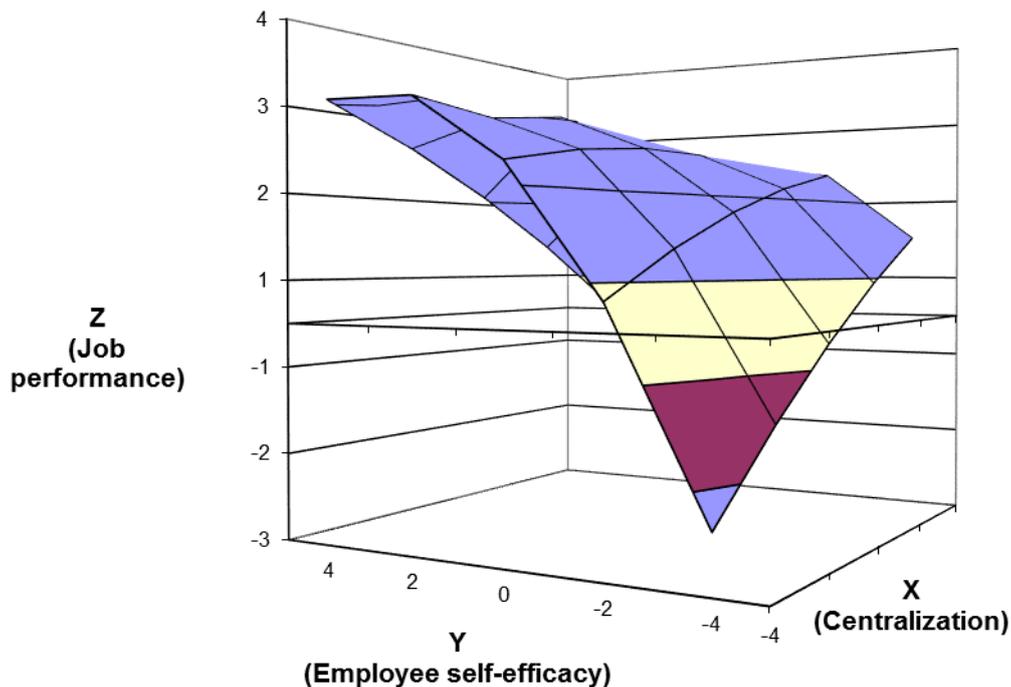


Figure 4. Job performance as explained by centralization and self-efficacy.

6. Discussion

This study contributes to the existing literature by offering a deeper understanding of how different dimensions of organizational structure separately and jointly relate to employee self-efficacy and how they interact with self-efficacy to influence employee task performance.

Our results demonstrate that formalization positively affects self-efficacy while centralization relates negatively to self-efficacy. The significant positive relationship identified between formalization and self-efficacy suggests that a formalized set of practices and routines may foster self-efficacy by enabling a clear understanding of task activities and performance expectations and by providing information about one's personal effectiveness. The negative relationship between centralization and self-efficacy suggests that responsibility and authority over day-to-day task performance and participation in decision-making is important to the occurrence of self-efficacy. It seems that creating a participative environment and offering employees enough opportunities to perform their job tasks without much hierarchical intervention creates a good setting for building perceptions of prowess and competence. This is consistent with earlier research showing that low autonomy and empowerment is associated with low motivation [130] and hinders self-direction and control, leading to few mastery experiences [89,111].

Moreover, the findings indicate that the performance-related effects of these structural characteristics are partially explained by self-efficacy. These findings somewhat diverge from previous studies that have examined the role of self-efficacy as a mediating process between structural empowerment and performance and found it to have a major contribution as an explanatory mechanism [27,29,30]. The partial mediation effect found in our study suggests that performance-related effects may not be only a function of a prior increase in self-efficacy. This implies that there may be additional benefits of structure for performance that we did not capture in our model. For example, this may be a function of enhanced learning. According to earlier assertions, a greater structure (formalization) may promote learning by creating a predictable environment [40], sense of ownership, and accountability [131,132], reducing the likelihood of outside interference during task completion [133] and the focused development of new ideas [134].

The interaction between formalization and centralization reveals that the influence of structure can be captured in a better way by examining the joint effects of the two dimensions. Our research supports previous findings that high formalization and high centralization have contradictory effects, and hybrid bureaucracies tend to be better at eliciting positive reactions from employees [22,67]. According to Lin and Germain [106], the combination of low centralization and high formalization allows a firm to have an ideal structure. These structural features together may also provide a context for the occurrence of self-efficacy. Thus, a hybrid form of organizational structure with high formalization and low centralization seems to be an important environmental condition for the occurrence of self-efficacy. In general, the results suggest that employees are not opposed to formalization if they are involved in organizational affairs and have input into the creation of rules, policies, and procedures. This suggests that employees feel empowered in a decentralized structure with enough formalization. The reason is that the routines and standard operating procedures created by formalization provide sufficient autonomy for decisions at a lower level without a loss of control [135]. The positive effect of centralization with self-efficacy under low formalized conditions suggests that in the absence of formally designed rules and procedures, some hierarchy is also required. This indirectly corresponds to earlier assertions that contend that a directive management or leadership approach is important for defining goals and performance expectations [136], granting autonomy to individuals and teams [137], and providing information about a member's competence [138]. Such an approach is argued to be specifically beneficial in a homogenous team context that fosters conformity and hampers readiness for reflection, and taking a directive approach may encourage a process of reflection [139]. It is probable that we found this relationship because of the functionally homogeneous teams/work units in our study.

Formalization and centralization were also found to moderate the relationship between self-efficacy and task performance. As expected, there was a stronger impact of self-efficacy under low formalized conditions. This implies that high self-efficacy individuals are less dependent on situational support than those with low efficacy when it comes to exerting effort to perform at a higher level. This corresponds with previous studies that suggest that employees with a positive self-image rely more on their personal skills in carrying out their work tasks while those with perceptions of low competence look for external cues and support to initiate and perform (e.g., [109]). This further suggests that highly efficacious individuals are less affected by ambiguous situations than individuals with low self-efficacy. It seems that employees with high self-efficacy profit less under highly standardized conditions, which may be because prescribing every step at work tends to offer few opportunities to apply individual skills and knowledge leading to fewer mastery experiences. The interactive effects of self-efficacy and centralization reveal that high self-efficacy is more compatible with low centralization, while low efficacy better corresponds with centralized conditions. This suggests that individuals with low efficacy benefit more from top down guidance in organizing their work, while those with high efficacy employ their own strategies in organizing and planning their work that subsequently provides more information about personal effectiveness leading to high performance levels. The curvilinear relationship of self-efficacy with performance in low centralized conditions, suggests an inverted-U shape relationship. The implication here is that even highly self-efficacious people need some clear top down guidance and information about their competence from leaders, which is otherwise not available in the total absence of hierarchy.

6.1. Theoretical and Practical Implications

Our study advances the literature on SCT by offering new insights into the role of organizational structure as an important facet of work environment that may both influence how employees feel about their capabilities to accomplish work and how such perceptions translate into work performance. Future studies may consider other aspects of formal and informal environments including other structural characteristics to show how SCT can be constructively adapted to the field of organizational behavior. Our findings also offer some important implications for the JD-R model [130], because the

model includes many structural aspects such as job resources and demands and considers self-efficacy as a personal resource. According to the JD-R model, the non-availability of a particular job resource (e.g., autonomy) is not demanding and the absence of a particular demand (e.g., role ambiguity) does not promote motivation. Interestingly, in our study we found that formalization (role clarity) strengthens self-efficacy which implies that role clarity (the opposite of role ambiguity) tends to act as a job resource. This suggests that the non-availability of a certain job resource (e.g., a centralized work environment) may at times be demanding and the reverse of a certain job demand (e.g., role clarity) may be motivating.

Our findings provide some important implications for organizations seeking to establish a sustainable workplace. Organizations can cultivate sustainable workplaces through effective management and use of employees' cognitive resources. Since self-efficacy perceptions impact the sustainability of employee effort and performance, organizations may benefit from configuring a structure that can create a favorable environment for raising the efficacy levels of their employees. Our findings indicate that formalization and decentralization have positive structural impacts on the occurrence of self-efficacy, and they even increase task performance by harnessing the motivational forces of self-efficacy. Hence, to nurture a sustainable workplace, it is important for organizations to adopt a structure that offers high clarity in terms of work rules and task processes, involves low hierarchical interventions in the affairs related to employees' daily tasks, and brings people from different organizational levels together in the process of decision-making. This can contribute to the development of efficacy beliefs in employees. In addition to the formal structural arrangements, organizations may also help employees build their cognitive structures by creating an informal social milieu that provides employees with socialization experiences and opportunities to interact with others. This is consistent with earlier research that suggests that social interactions are thought to have beneficial effects on the development of one's cognitive beliefs (e.g., [140,141]).

6.2. Limitations and Suggestions for Future Research

Apart from self-reporting and the cross-sectional nature of our research, this study has certain other limitations. First, we found that self-efficacy partly mediated the positive relationship between formalization and performance; but we did not empirically test how formalization fosters efficacy via its four sources (enactive mastery, vicarious learning, verbal persuasion and psychological arousal), which is advisable for future studies to enable an even better understanding of the role of organizational structure in employee efficacy beliefs. Moreover, we tested one-way relationships in our study, though SCT suggests reciprocal relationships between work environment, cognitive factors, and behavior. Future studies may examine if efficacious individuals have an impact on structuring their own work environment. Furthermore, we suggest that future studies test structural impacts on self-efficacy employing other theoretical perspectives such as the JD-R model and agency theory. Using this model will be interesting for unearthing whether formalization (role clarity) acts as a job resource, and centralization (lack of control at work) acts as a job demand, and whether they affect performance via self-efficacy, which JD-R assumes as a personal resource. Likewise, agency theory may offer another interesting perspective to underpin our understanding of how a firm's structure signals control and the ability to act, ultimately influencing perceptions of self-efficacy. For example, perceptions of control over the firm is argued to foster the agent's efficacy beliefs leading to productive behaviors (e.g., [142]).

Second, this study was conducted in a public organization with work units engaged in stable tasks and members with more homogenous backgrounds. Thus, our findings are likely to be generalizable mainly to work units with repetitive tasks and ample homogeneity. Future research could extend to work units that are heterogeneous and engaged in entrepreneurial and variable tasks to assess the validity of our findings. For example, employees who perform fewer routine tasks need to be flexible; therefore, any attempts to impose specific work standards, procedures, or guidelines are likely to be less favorable in shaping their efficacy perceptions.

Third, the sample for this research was drawn from a high-power distance society, which might limit the generalizability of the results to other cultures. Cultural differences may cause employees of different societies to view organizational structure differently. In high-power distance cultures, people are less susceptible to the effects of hierarchy [143,144], which may potentially lead to fewer negative effects from centralized structures on employee behavioral and cognitive reactions, such as self-efficacy. We therefore suggest future studies compare employees from culturally different countries on power distance values. Findings by Michaels et al. [145] indicate that formalization has different effects on role conflict among respondents from low (US) and high-power distance societies (Japan and Korea). Finally, in view of our sole focus on the role of organizational structure, future studies may examine how other contextual factors, such as technology and organizational culture, interact with structural variables to influence the development of self-efficacy and its performance effects.

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