GET READY, PATH-GOAL THEORY IS BACK!

by

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This is to certify that I have examined this copy of a master's thesis by

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Statement of Authorship

This thesis contains no material that has been accepted for an award or any other degree or diploma in any university or institution. To the best of the candidate's knowledge, it is affirmed that the thesis does not compromise any material previously published or written by another person with the exception of where due references are made.

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Abstract

Path-goal theory's main idea is that there is no one best style of leadership, leaders should have different behaviors in their toolbox, and they should use them according to the nature of the situation and the followers (House, 1971). Although this theory has intuitive appeal for practitioners, it has not been tested rigorously. Limited research evidence questions its validity for 21st century follower outcomes. Thus, this study investigates whether path-goal theory leads to the three important outcomes of contemporary work organizations; creative and innovative performance (CIP), adaptive performance (AP) and organizational citizenship behaviors (OCB). The present study focuses on one mediator (i.e. psychological safety) and two moderators (i.e. core self-evaluation and task structure) in order to reveal the intricate relationship between leader behaviors and follower outcomes. The data were collected from 664 employees from different occupations using Amazon's Mechanical Turk platform. The findings support; (1) the mediating effect of psychological safety between leadership behaviors and AP and OCB, (2) interaction among leadership, task structure and core self-evaluation on OCB, (3) and negative moderation of task structure and core self-evaluation on the relationship between leadership and follower outcomes.

Keywords: leadership, path-goal theory, psychological safety, creative and innovative performance, adaptive performance, organizational citizenship behaviors

Özet

Yol-amaç kuramının ana fikri tek bir en iyi liderlik tarzının olmadığı, liderlerin liderlik çantalarında farklı davranışlara sahip olmaları gerektiği ve bu davranışları farklı durumların ve yönettikleri çalışanların özelliklerine göre kullanmaları gerektiğidir (House, 1971). Bu kuram uygulayıcıların ilgisini çekmiş olsa da yeterince test edilmemiştir. Sınırlı sayıda çalışma bu kuramın 21. yüzyılın gerektirdiği çalışan performans çıktıları için geçerli olup olmadığını sorgulamıştır. Bu yüzden, bu çalışmada yol-amaç kuramı 21. yüzyılın üç önemli çalışan çıktısı ile test edilmiştir; bu çıktılar yaratıcı ve yenilikçi performans, uyum performansı ve örgütsel vatandaşlık davranışlarıdır. Buna ek olarak, bu çalışma, lider davranışları ve çalışan çıktıları arasındaki karmaşık ilişkiyi anlamlandırmak için bir aracı değişkeni (psikolojik güvenlik) ve iki düzenleyici değişkeni (görev yapısı ve öz benlik değerlendirmesi) test etmektedir. Veri Amazon Mechanical Turk platformu aracılığıyla, farklı meslek gruplarından 664 çalışandan toplanmıştır. Bulgular, (1) psikolojik güvenliğin liderlik davranışları ile uyum performansı ve örgütsel vatandaşlık davranışları arasında aracı değişken rolü oynadığını; (2) liderlik, görev yapısı ve öz benlik değerlendirmesi arasında üç yönlü ilişki bulunduğunu; (3) görev yapısı ve öz benlik değerlendirmesinin liderlik davranışları ve çalışan çıktıları arasında ayrı ayrı negatif düzenleyici değişken rolü oynadıklarını göstermiştir.

Anahtar Kelimeler: liderlik, yol-amaç kuramı, psikolojik güvenlik, yaratıcı ve yenilikçi performans, uyum performansı, örgütsel vatandaşlık davranışları

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Introduction

The million-dollar question of leadership science and practice is 'What kind of leader behaviors make a leader effective?'. Clearly, such an important question cannot be an easy one. Many theories have been proposed to explain how a leader should act to become effective (see Avolio, 2007 for a review). Some of these theories such as transformational leadership (Bass, 1985), authentic leadership (Avolio & Gardner, 2005), and servant leadership (Dennis, Kinzler-Norheim, & Bocarnea, 2010) have become more popular than others. Even though these theories propose different leader behaviors, they all have the same underlying assumption that one set of behaviors would be effective in all situations. However, it was also stated by researchers that effectiveness of the behaviors depends on follower and situational contexts (Stogdill, 1974). Therefore, the assumption of 'one type of leadership fits all' is often questioned. Contingency theories (cf. Yukl, 2011) have been proposed to challenge this assumption. They state that effectiveness of leaders' behavior should be contingent upon different contingencies. Unfortunately, the premises of these theories have not been rigorously tested. Despite early attempts, in recent years, researchers seem to give up on searching empirical evidence on it. Ironically enough, practitioners have been using these theories to train leaders without scientific support that is needed. This proves that there is an urgent need to resurrect these theories in the scientific arena.

Contingency theories state that there is no one best style of leadership (see Gill, 2011 for a review). Leaders should have different types of behaviors in their leadership toolbox, and they should use one or multiple of these behaviors according to the nature of the situation, task and the followers. Effective leaders are those who are able to adopt these behaviors in different situations. A number of contingency theories have emerged over the years. The most popular ones are Fiedler's contingency model (Fiedler, 1964), Hersey's

situational leadership theory (Hersey, 1984) and House's path-goal theory (House, 1971). Each of these theories take a different approach in determining how different leadership behaviors relate to different outcomes, depending on the situational contingencies. The present study uses path-goal theory to create a more explanatory approach and tries to keep the empirical support on the foreground, because although this theory had an intuitive appeal for the researchers and practitioners, not only in relation to the contingency theories but also in relation to all the leadership theories, and it became popular, it was not tested rigorously.

In case of path-goal theory, a leader's toolbox includes directive, participative, supportive, and achievement-oriented behaviors (House & Mitchell, 1975). To briefly explain, directive behavior would result in an atmosphere where the followers are expected to follow the directives of the leader, whereas participative behavior would be more inclusive of the follower in decision making. The focus on supportive behavior would be more on the needs and wellbeing of the followers resulting in a friendly atmosphere, while the achievement-oriented behavior would set higher standards to enhance performance without as much guidance or support. The leader's correct use of these behaviors depending on different situations is expected to clarify the goals of the followers, as well as the paths to these goals and reduce the roadblocks that interfere with the goals. Initially, this well-thought strategy of path-goal theory has captured much researcher interest (cf. Jermier, 1996). Strikingly, it lost its popularity among researchers without fulfilling its promises. Limited research tested different task characteristics such as task structure (e.g. Greene, 1979), job autonomy (e.g. Levanoni & Knoop, 1985), task interdependence (e.g. Wofford & Liska, 1993), and different follower characteristics such as locus of control (e.g. Awan, Zaidi, & Bigger, 2008), dependence (e.g. Wofford & Liska, 1993) and ability (e.g. Malik, Hassan, & Aziz, 2011). Limited number of outcomes were also used to test the theory such as job performance, job satisfaction, job commitment (e.g. Wofford & Liska, 1993). Contrary to the

limited number of empirical studies of path-goal theory especially in recent years, it is praised by a number of the researchers as "a fairy sophisticated theory" (Schriesheim & Von Glinow, 1977, p. 398) and "the most effective contingency approach to leadership" (Robbins, 2005, p. 124). For this reason, it would be quite natural to expect this valuable leadership theory to be relevant to the 21st century too. This study aims to resurrect the theory that has proven itself to be invaluable long after it lost its popularity. To be more specific, in order to rekindle path-goal theory, this study investigates whether path-goal theory leads to the three important outcomes of contemporary work organizations (see Harari & Viswesvaran, 2018 for a review) creative and innovative performance (CIP) (Anderson, Potocnik, & Zhou, 2014), adaptive performance (AP) (Allworth & Hesketh, 1999) and organizational citizenship behaviors (OCB) (Podsakoff, Ahearne, & MacKenzie, 1997). In addition, there is a need to investigate the contingencies and the mediator. Therefore, the present study investigates how four leadership behaviors influence positive follower outcomes through psychological safety; how these relationships are moderated by contingencies such as core self-evaluation (Judge, Locke, & Durham, 1997) and task structure (see Figure 1).

The current research aims to make contributions to both science and practice. First, it tests whether path-goal theory is an effective approach to reach the three outcomes that are CIP, AP and OCB. CIP is "creative and innovative behavior engaged in by individuals or outcomes brought about by individuals" (Harari & Viswesvaran, 2018, p. 56). AP is defined as "the proficiency with which a person alters his/her behavior to meet the demands of the environment, an event, or a new situation" (Johnson, 2001, p. 985) and OCB "represent behaviors above and beyond those formally prescribed by an organizational role" (Netermeyer, Boles, McKee, & McMurrian, 1997, p. 87). Several researchers have studied these outcomes and stated the importance of them for the success and effectiveness of the

organizations (e.g. Eisenhardt & Tabrizi, 1995). The present study is the first one studying these outcomes using the path-goal theory.

Second, the mediating role of psychological safety on the relationship of four leadership behaviors to the above-mentioned follower outcomes is examined. Psychological safety means that people are not afraid of unfavorable results concerning self-image, position or career when expressing themselves (Kahn, 1990). The antecedents and consequences of this phenomenon have been studied frequently in recent years (cf. Edmondson, 1999), and specifically, its mediating role between other leadership theories and follower outcomes were examined (e.g. Edmondson & Lei, 2014). However, the present study is the first to test psychological safety in the context of path-goal theory.

Third, one task and one follower characteristic are tested as contingencies determining the efficiency of four leadership behaviors. Task structure, from the task characteristics, is the degree of specification of the requirements and nature of the task (Malik, 2012). Task structure is the only moderator under the task characteristics that is extensively examined and supported in relation to path-goal theory (Schiesheism & DeNisi, 1981). The follower characteristic that is core self-evaluation focuses on how people assess themselves and how they perceive their environment (Judge, Locke, & Durham, 1997). It is a compound personality trait that consists of self-esteem, generalized self-efficacy, locus of control and emotional stability (Judge & Bono, 2001). The effect of core self-evaluation on several job outcomes was reported such as job motivation, commitment, job and life satisfaction (C.-H. Chang, Ferris, Johnson, Rosen, & Tan, 2012). Due to fact that the previous studies that have tested different follower contingencies have mixed results, and there is not any follower characteristic which have strong empirical support, this compound characteristic is used for the first time in relation to path-goal theory.

Lastly, it is expected that this approach to path-goal theory will be a practical and scientifically supported theory for practitioners. Considering the fact that the average percentage of leadership failure is 50% (Bentz, 1985), and most of the current leadership trainings are not scientifically validated (Hogan, Curpy, Kaiser, & Chamorro-Premuzic, 2018), it is crucial to provide a scientific base for the practitioners who are already using these theories without strong empirical evidence. Furthermore, general characteristics of this century's organizations create a volatile, uncertain, complex and ambiguous (VUCA) environment. This century requires follower outcomes such as thinking out of the box, quickly adapting to changes and working as a group, instead of older follower outcomes such as high job satisfaction or job commitment. For these reasons, it is also crucial to establish a theory with contemporary follower outcomes that are vital for 21st century.

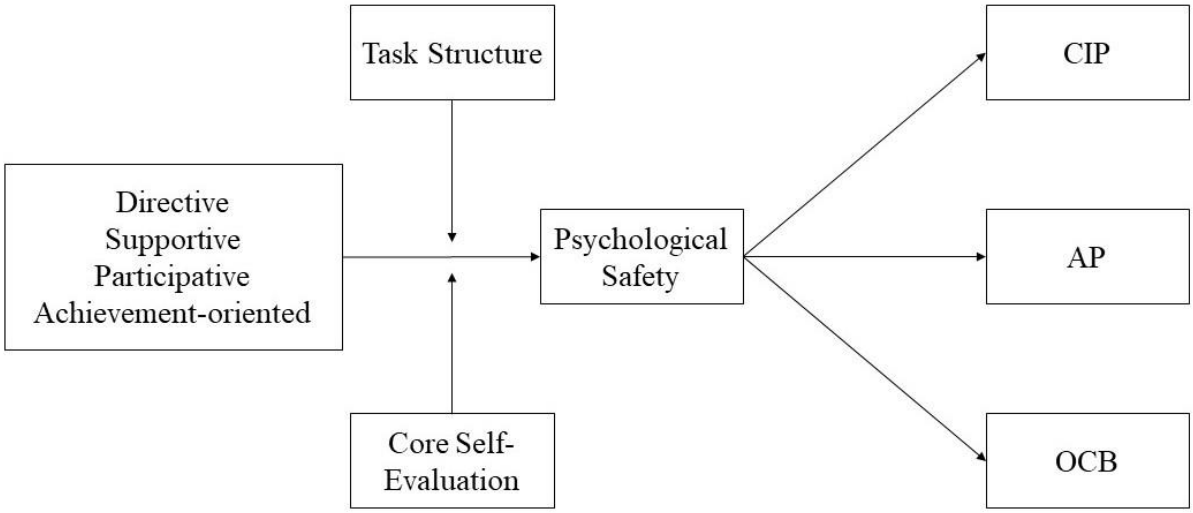

Figure 1. Conceptual model of the present research.

Literature Review

Path-Goal Theory

Path-goal theory of leadership is based on a more general motivation theory called expectancy theory which proposes that an individual's attitudes (such as satisfaction) or

behaviors can be predicted from the degree to which behavior is seen to lead to valued outcomes (Vroom, 1964). Thus, the function of a leader is to develop and clarify the path to followers' personal goals so that their motivation to perform those goals or their job satisfaction are increased. The leader must recognize followers' needs for outcomes over which s/he has some control, increase the personal payoffs for followers for goal attainment, make the path to those payoffs easier by coaching and directing, help followers clarify their expectancies, reduce barriers, and increase the opportunities for personal job satisfaction dependent on work performance (House & Mitchell, 1975).

The theory proposes four kinds of leader behaviors to accomplish those functions; directive, supportive, participative and achievement-oriented leadership behaviors (House & Mitchell, 1975; Northouse, 2006). Directive leader informs his/her followers about what is expected of them, gives specific instructions about their task including what is to be done and how it should be done, and sets the deadlines of those tasks. S/he sets and maintains definite standards for followers' performance, clarifies the requirements and makes them easy to follow. Supportive leader behaves in an approachable and friendly way and would be concerned on the wellbeing and basic needs of followers. Such a leader does little things to make the work of followers more pleasant. Moreover, s/he treats followers as equals, and respects them. Participative leader involves followers into the decision-making processes. With such a leadership, the followers have a chance to convey their ideas and opinions, and be a part of the executive process. Achievement-oriented leader expects followers to perform at their highest level possible. S/he challenges followers by setting high standards of excellence and continuously seeking improvement in performance. In addition, this leader displays high degree of confidence that followers would assume responsibility, put effort and accomplish the challenging goals.

Based on the functions of the leader and four kinds of leader behaviors, the theory has two basic propositions (House & Dessler 1975). The first one is that followers' psychological state which leads to motivation to perform or the satisfaction with the job will increase to the extent to which the leader fulfills his/her functions. The second proposition is that the specific leader behavior which increases motivation or satisfaction is situationally determined; the choice of the leadership style is influenced by the characteristics of the followers and the work situation.

Follower characteristics regulate followers' perception of a leader's behavior. In the original theory, two follower characteristics are specified. The first one, locus of control, is to what extend individuals believe that whatever happens in their life are the results of their own behaviors (internals) rather than luck or fate (externals) (Lefcourt, 1991). The second characteristic, perceived ability is the extent to which individuals feel able to perform tasks and accomplish goals (Malik, 2012). These characteristics regulate the extent to which followers experience the behavior of their leader as an immediate source of satisfaction or instrumental to future satisfaction (House & Mitchell, 1975). To be more specific, followers who have internal locus of control and/or high perceived ability, perceive directive leadership redundant or excessively controlling because they prefer to have control and/or feel competent to complete their own work. They would feel comfortable with participative leadership as it enables them to be in control of their work. On the other hand, followers who have external locus of control and/or low perceived ability would prefer to take clear directives and work with close guidance, thus directive or supportive leadership could be more proper for them.

Environmental characteristics also have a substantial effect on follower satisfaction and motivation. It is named as 'task characteristics' in most of the path-goal studies (Indvik, 1985). Three characteristics are explained in the original article of the theory; the follower's

task, the primary work group of the followers, and the formal authority system of the organization (House, 1971).The behavior of the leader causes motivation for the followers to the extent to which the behavior complements the environment and supplements what it otherwise lacks. More specifically, when the structure of the environment is high (i.e. highly structured task, established authority system, strong group norms), directive leadership would be redundant as the structure a follower needs is already provided by the environment. To complement the environment, supportive leadership would be preferred to decrease the boredom of working in a structured environment.

Even though those five characteristics are specified in the theory, it is stated by House and Mitchell that there could be many other characteristics that can be added to the theory in the future (1975). Researchers have focused on task structure, job autonomy, job scope, feedback as task characteristics; locus of control, need for clarity and dependence as follower characteristics (see Wofford & Liska, 1993 for a review).

Task Structure and Core Self-Evaluation as Contingencies

Task structure. Task structure is "the degree of specifications of the requirements of a task" (House & Dessler, 1975, p. 86). In other words, it is the degree of the simplicity, repetitiveness, and unambiguousness of the follower's task. It is stated in the path-goal theory that task structure moderates the relationship between follower outcomes and directive and supportive leaderships. More specifically, it is asserted that task structure is a negative moderator on the relationship between directive leadership and follower outcomes, but a positive moderator on the relationship between supportive leadership and follower outcomes. The rationale behind these hypotheses is that when the task of a follower is unstructured, directive leadership helps the follower to clarify what and how the task should be done. Conversely, when the follower works in a highly structured task which creates boredom and

dissatisfaction, because supportive leadership includes friendly behavior, social support, and efforts to create a more enjoyable work environment such a leader reduces the boredom and offset the dissatisfying nature of structured tasks (Greene, 1979). The original hypotheses are as follows;

Hypothesis 1: Task structure has a negative moderating effect on the relationship between directive leadership and the following dependent variables: follower job satisfaction and expectancies that effort leads to performance and performance leads to rewards. Specifically, the lower the task structure, the higher is the relationship between directive leadership and the dependent variables.

Hypothesis 2: Task structure has a positive moderating effect on the relationship between supportive leadership and the following dependent variables: follower job satisfaction and expectancies that effort leads to performance and performance leads to rewards. Specifically, the lower the task structure, the lower is the relationship between supportive leadership and the dependent variables.

These two hypotheses which explain the relationship between two leadership behaviors (i.e. directive, supportive) and follower outcomes moderated by task structure have captured much interest by researchers and task structure has become the most extensively studied and supported contingency (Schiesheism & DeNisi, 1981). Hypotheses were tested by using several different follower outcomes such as job satisfaction, job performance, role clarity, job expectation, job involvement, acceptance of the leader (e.g. Abdel-Halim, 1981; Awan, Zaidi, Naz, & Noureen, 2011; Greene, 1979; Schriesheim & Schriesheim, 1980). Even though both of the hypotheses were supported by several studies (e.g. Greene, 1979; Sims & Szilagyi 1975), results of the supportive leadership and task structure interaction were most consistent (Abdel-Halim, 1981). Participative and achievement-oriented leadership, as most

under-researched leader behaviors in general, were not studied extensively with task structure moderator.

Core Self-Evaluation. Core self-evaluation can be described as people's perceptions of themselves, others and the world (Johnson, Rosen, & Levy 2008). It is a broad, integrative trait consisting of self-esteem (i.e. the overall value one ascribes on oneself as a person) (Judge & Bono, 2001), generalized self-efficacy (i.e. one's understanding of their ability to perform and be successful), (Judge & Bono, 2001), locus of control (i.e. the perceived degree of control over life events) (Lefcourt, 1991), and emotional stability which is the tendency to be steady, secure and confident (Judge et al., 2000). Research support that these compound concepts are higher order constructs (Judge, Thoresen, & Pucik, 1996), and their composition indicates momentarily steady personal aptitudes (Judge et al., 2000). People with higher levels of core self-evaluation perceive themselves as adept, deserving, and potent because they assess themselves positively at all times and situations. (Judge, VanViaren, & Pater, 2004). As such, the consequences of high level of core self-evaluation on job-related outcomes were shown by different studies (e.g. Ritz, Shantz, Alfes & Arshoff, 2012). A larger body of research has found that people who have high core self-evaluation are more motivated and committed (Erez & Judge, 2001), perform better (Judge, Erez, Bono, & Thoresen, 2003), avoid counterproductive behaviors (Judge & Bono, 2001), are more satisfied with their work and their life in general (Judge & Bono, 2001). In addition to these, a handful of studies show the moderating effect of core self-evaluation on the relationship between leadership and follower outcomes such that core self-evaluation moderates the relationship between transformational leadership and followers' motivation and performance (Nubold, Muck, & Maier, 2013), the relationship between leadership and followers'

commitment to change (Ritz et al., 2012). Although these studies show the interaction of core self-evaluation and leadership, research investigating this interaction is scarce.

In the studies of path-goal theory, core self-evaluation was not used as a follower characteristic that affects the relationship between leadership behavior and follower outcomes before. The two follower characteristics in the original theory are locus of control and perceived ability of the follower, and it is stated that followers who have internal locus of control prefer participative leadership, similarly when the follower has a high degree of perceived ability, it is less likely that the follower would prefer directive leadership (House & Mitchell, 1975). The reason that core self-evaluation takes the place of the previously used follower characteristic in this study is that core self-evaluation already encompasses the two follower characteristics stated in the original theory (i.e. locus of control, perceived ability), and also it extends to include other constructs that should be considered in a work environment. Due to all these dimensions of core self-evaluations, it is expected to be a meaningful contingency in path-goal theory.

Psychological Safety

Psychological safety can be described as the perception that “people are comfortable being themselves” (Edmondson, 1999, p.354) and “feel able to show and employ one’s self without fear of negative consequences to self-image, status or career” (Kahn, 1990, p.708). In a psychologically safe environment, people believe that they will be responded positively when they express their thoughts such as asking questions, reporting a mistake, sharing a new idea, or seeking feedback (Edmondson, 1999).

The contribution of leader behaviors on psychological safety is shown by research (Edmondson, 1996; Nembhard & Edmondson, 2006). To be more specific, Edmondson (2004) suggests that acceptance, availability and approachability in a leader's behavior is

reflected as the development of psychological safety in the follower's behavior at a work environment. When the leader is open to listen to the followers, pays attention to new ideas and is available to discuss different opinions to reach the work-goals, followers tend to share more suggestions, and do not fear to take the risk of applying new ideas. These suggestions were supported by Nembhard and Edmondson (2006) such that the sense of psychological safety of followers increased when they perceived that the leader invited and appreciated their input. Moreover, the positive relationship between psychological safety and different leadership styles such as inclusive leadership (Carmeli, Reiter-Palmon, & Ziv, 2010) and transformational leadership (Carmeli, Sheaffer, Binyamin, Reiter-Palmon, & Shimoni, 2013) were shown.

Considering the above-mentioned requirements for a leader (e.g. being appreciated) to create the feeling of psychological safety in the follower (Edmondson, 2004), a positive relation is likely to occur between psychological safety and leadership behaviors of path-goal theory when moderated by task structure and core self-evaluation. This is expected because this would mean that the leader would consider the traits of the followers and the task that they work on when s/he decides on the right leadership behavior. Followers would feel safe in two ways. First, they would feel safe to express their ideas because they are led according to their task requirements. Second, they would feel safe because being led according to their traits would make them feel accepted and appreciated as they are. Hypothetically speaking, when a leader is faced with a follower’s task, s/he will consider the leadership behaviors to find the appropriate behavior for that task. Since the leader simultaneously be thinking of the specific follower characteristics who will work on the task, s/he will also have certain corresponding behaviors to exhibit for such a follower. As a result of these two simultaneous thought processes (i.e. finding a behavior that will correspond to the task structure and finding a behavior that will also correspond to the follower characteristic), the leader is

expected to find the behavior that is most likely to enhance the psychological safety of the follower.

To be more precise, it is expected that the combination of different levels of task structure and core self-evaluation would influence leadership behaviors to be more effective in creating psychological safety.

Achievement-oriented and participative leader behaviors are expected to be more effective for followers with higher core self-evaluation compared to directive and supportive leader behaviors because lower order traits that make up core self-evaluation cause them to be more autonomous and emotionally stable. When a follower with high core self-evaluation works on a high structured task, leaders do not need to be much involved with the task because the task itself provides enough guidance and it is likely to expect high performance from the followers, thus achievement-oriented leadership would be the most proper behavior for this follower. On the other hand, participative leadership would be most appropriate when the task structure is low as the followers might need the guidance of the leader more.

Supportive and directive leadership behaviors are expected to be more compatible with followers who have lower core self-evaluation, because these followers are expected to be more dependent and emotionally unstable, the aspects that would cause them to work more efficiently with close guidance of a leader. When working on a highly structured task, supportive leadership would be more appropriate because emotional support would be more crucial for the follower as task structure provides enough guidance on that area. Conversely, it is more crucial to employ directive leadership behavior to provide task guidance for an unstructured task

Psychological safety and Creative and Innovative Performance (CIP), Adaptive Performance (AP), Organizational Citizenship Behaviors (OCB)

Creativity and innovation at work are "the processes, outcomes and products of attempts to develop and introduce new and improved ways of doing things" (Anderson, Potočnik, & Zhou, 2014, p. 1298). Respectively, creative performance relates to the ability to create authentic ideas, whereas innovative performance relates to the ability to actualize these ideas to benefit the organization as a whole (Hülsheger, Anderson, & Salgado, 2009). Research has shown that CIP of individuals are vital for the success of modern organizations (Eisenhardt & Tabrizi, 1995). Thus, CIP has been explicated as an important dimension of individual job performance with relevance across different jobs (Oldham & Cummings, 1996), and the antecedents and consequences of CIP have been studied by several researchers (cf. Pace & Brannick, 2010). These studies yielded following factors as influencing CIP: motivation (Grant & Berry, 2011), leadership (Tierney, 2008), organizational identification (Majdar, Greenberg, & Chen, 2011), and need for cognition (Wu, Parker, & Jong, 2014).

Another critical dimension of job performance is AP that can be defined as "the proficiency with which a person alters his/her behavior to meet the demands of the environment, an event, or a new situation" (Johnson, 2001, p. 985). It is considered as a dimension of overall job performance that is different from task and contextual performance (Han & Williams, 2008). It has eight dimensions which are "handling emergencies or crisis situations; handling work stress; solving problems creatively; dealing with uncertain and unpredictable work situations; learning work tasks, technologies, and procedure; demonstrating interpersonal adaptability; demonstrating cultural adjustment; and demonstrating physically oriented adaptability" (Pukalos, Arad, Donovan, & Plamondon, 2000, p. 613). Since workers have to deal with frequent changes in their task environment due to increasingly dynamic job demands in modern organizations (Huang, Shoss, & Jundt,

2018), AP is studied by several researchers (e.g. Chen, 2005; Cronshaw & Jethmalani, 2005). Most of the research focused on individual differences as antecedents of AP such as general and specific cognitive abilities (Allworth & Hesketh, 1999), Big 5 traits of openness to experience, conscientiousness, emotional stability (Pukalos et al., 2006), self-efficacy, sociability, goal orientation (Kozlawski, Gully, Brown, Salas, Smith, & Nason, 2001).

The third dimension of job performance, OCB is defined as "behaviors which benefits the organization or is intended to benefit the organization, which is discretionary, and which goes beyond existing role expectations" (Van Dyne, Cummings, & McLean Parks, 1995, p. 218). Even though it is defined in several ways, many of these definitions commonly view OCB as an extra-role behavior, not directly rewarded by organization's formal reward system, and as important for organization to function effectively and successfully (MacKenzie, Podsakoff, & Fetter, 1993; Organ, 1988; Organ & Konovski, 1989). Since it has positive effects on organization's effectiveness, a wide range of antecedents of OCB were examined, and found that job satisfaction (Brown, 1993), organizational commitment (Allen & Meyer, 1996), quality of the relationship with the leader (Podsakoff et. al, 2000), Big 5 traits of conscientiousness, agreeableness (Organ & Ryan, 1995) are some of the antecedents of OCB.

When the above mentioned three job performance dimensions are considered, psychological safety, the 'feeling of comfort of being yourself,' can be expected to be an antecedent of these job performance dimensions. This expectation is based on studies that support the idea that people who feel psychologically safe can comfortably express and discuss their feelings, and these can enhance their creative performance (Edmondson & Lei, 2014). Furthermore, various studies demonstrate similar relationships such as the link between transformational leadership and creative problem solving mediated by psychological safety (Carmeli et al., 2013) or psychological safety had a mediating effect on the relationship

between inclusive leadership and employee involvement in creative tasks (Carmeli, Reiter-Palmon, & Ziv, 2010). Agreeably, due to the fact that workers who feel psychologically safe do not avoid being themselves or making mistakes, their adaptive performance is expected to be high. Additionally, these people would be more motivated to exhibit OCB in an environment where they feel safe and accepted. Psychological safety and OCB relationship that was tested in team level is expected to exist on an individual level as well (Yi, 2005).

Based on the two groups of expected relationships (i.e. the relationships between leadership behaviors, task structure, core self-evaluation, psychological safety and the relationships between psychological safety, CIP, AP, and OCB) it is hypothesized that;

Hypothesis 1: Under conditions of low task structure and low core self-evaluation, directive leadership will be most strongly associated with psychological safety, which in turn be positively associated with CIP, AP, and OCB.

Hypothesis 2: Under conditions of high task structure and low core self-evaluation, supportive leadership will be most strongly associated with psychological safety, which in turn be positively associated with CIP, AP, and OCB.

Hypothesis 3: Under conditions of low task structure and high core self-evaluation, participative leadership will be most strongly associated with psychological safety, which in turn be positively associated with CIP, AP, and OCB.

Hypothesis 4: Under conditions of high task structure and high core self-evaluation, achievement-oriented leadership will be most strongly associated with psychological safety, which in turn be positively associated with CIP, AP, and OCB.

Pilot Study

The current research composed of two studies. Pilot study aims to test the factor structure of the scale, which was used to measure four leadership behaviors, because the factor structure of the scale was not provided in the studies that have used this scale. Besides, the researchers of the present study connected to Julie Indvik, the person who created the scale, via e-mail, and asked for the psychometric properties and factor analysis results of the scale. However, she answered that she did not have access this information. Thus, this pilot study was conducted to make sure that the leadership behaviors constitute four different factors.

Participants and Procedure

Data were collected for the study by using Mechanical Turk (MTurk), an online labor market operated by Amazon. On MTurk, short tasks are posted by requesters and completed by workers for a wage. Since MTurk provide access to a diverse and large subject pool, and it is known that the samples from that platform represent overall population better than typical Internet recruitment samples (Buhrmeister, Kwang, & Gosling, 2017), MTurk was chosen to collect data for the present study. Data collection was conducted in August 2018. Participants accessed the survey via a Qualtrics link. The requirement criteria for participation were being either a part-time or full-time employee, and working with the same leader in the workplace for at least six months because people need some experience to be able to evaluate their leaders correctly. Thus, those who did not comply with these criteria were logged out from the survey. The survey composed of the demographic questions and the scale measuring leader behaviors (see Appendix A). Participants who completed the survey were compensated with $0.10 upon completion.

Initially, 170 participants were recruited; however, 19 of them were excluded as they did not answer the attention check item correctly. The final sample consisted of 151 participants (54.7% males, 45.3% females). Their age ranged from 20 to 71 (M = 36.97, SD = 11.81). One percent of them completed less than high school education, 3% completed high school education, 69% had college degree and 27% post-graduate degree. Most of the participants (91.5%) were employed full-time and the rest were part-time workers (8.5%). Their general tenure ranged from 1 to 45 years (M = 13.9, SD = 11.39), and their tenure at their current organization ranged from 1 to 42 years (M =6.46, SD = 5.87).

Measures

Leadership behaviors. The Path-Goal Leadership Questionnaire created by Indvik (1985) is used to confirm its factor structure. This scale measures four types of leadership behaviors which are directive, supportive, participative and achievement-oriented. This scale (1 = almost never, 5 = almost always) consists of 20 items, with 5 items for each leadership styles, and higher scores indicate higher level of leadership behavior. On 5-point response scale, the scores a participant receives provide information about the frequency of use on each of the four behavior styles. The scale is created for the leaders to assess their own leadership behaviors; thus, items were transformed in a way that employees can assess their leaders. Sample items are as follow: “My leader asks me to follow standard rules and regulations.” for directive, “My leader maintains a friendly working relationship with me.” for supportive, “My leader consults with me when facing a problem.” for participative, and “My leader lets me know that s/he expects me to perform at my highest level.” for achievement-oriented (see Appendix A).

Results

The confirmatory factor analysis had poor fit statistics, $\chi^2(164) = 618.106$, *CFI* = .72, *TLI* = .676, *RMSEA* = .136, 95% CI [.125, .147]. It is understood from the factor loadings that the factor loadings of four reverse coded items were either low or negative. Thus, these items were excluded, and factor analysis conducted again with 16 items. The four latent variables (i.e. directive, supportive, participative, achievement-oriented leadership) were allowed to correlate. The new fit statistics were acceptable, $\chi^2(92) = 162.242$, *CFI* = .947, *TLI* = .931, *RMSEA* = .071, 95% CI [.053, .089]. Factor loadings can be seen in Appendix B.

To be able to confirm the 4-factor structure of Path-Goal Leadership Questionnaire, confirmatory factor analysis was conducted. The unsatisfactory fit statistics and problematic factor structure showed that reverse coded items did not load as expected. Their either low or negative factor loadings indicated possible misunderstanding of these items and failure to perceive the items as reverse coded. In addition, since it is known that reverse coded items may lead to undesirable consequences such as lowering the reliability of the scale or distorting the factor structure (e.g. Weijters & Baumgartner, 2012), and in the present study reverse coded items also lowered the reliability of the scale to a considerable degree, these items were dropped to increase the reliability of the scale.

Main Study

Main study aims to test the hypothesized relationships between four leadership behaviors and three follower outcomes through psychological safety, and the moderating effects of task structure and core self-evaluation of followers on these relationships. To be more specific, the study aims to test if each of the leadership behaviors, in combination of different levels of task structure and core self-evaluation, most strongly associates with

psychological safety and if psychological safety partially mediates the relationship between each leadership behaviors and CIP, AP, and OCB.

Participants and Procedure

Participants were recruited from Amazon's MTurk because of the advantages of this platform. Data collection was conducted in October and November 2018. Participants answered the survey via a Qualtrics link. The requirement criteria for participation were being either a part-time or full-time employee, and working with the same leader in the workplace for at least six months because people need experience for being able to evaluate their leaders correctly. Thus, those who did not comply with these criteria were logged out from the survey. The survey composed of the demographic questions, and the scales measuring leader behaviors, task structure, core self-evaluation, psychological safety, creative and innovative performance, adaptive performance and organizational citizenship behaviors, respectively (see Appendix C). Participants who completed the survey were compensated with $0.30 upon completion.

Initially, 700 participants were recruited. However, 36 of them were excluded as they did not answer both of the attention check items correctly. The final sample consisted of 664 participants (43.2% males, 56.2% females, 0.6% other). Their age ranged from 18 to 73 years, with an average of 35.72 (*SD* = 11.40). Nine percent of them completed high school education, 71% had college degree and 20% had post-graduate degree. Their general tenure ranged from 1 to 51 years (*M* = 13.58, *SD* = 11.03), and their tenure at their current organization ranged from 1 to 43 years (*M* =5.86, *SD* = 5.11). Most of the participants (85.5%) were employed full-time and the rest were part-time workers (14.5%).

The necessary sample size was determined by using Monte Carlo simulation (Mooney, 1997), because G-Power is not applicable to determine the sample size that is

required for path analyses (Faul, Erdfelder, Lang, & Buchner, 2007). In the simulation, the population parameters were simulated as hypothesized using a large number of samples. Then, the model values are estimated, which are all averaged. The population parameters were hypothesized using the results of previous studies about path-goal theory (e.g. Greene, 1979; Indvik, 1985) and the educated estimations of the researchers. The estimations ranged from .13 to .18, with an average of .15. The results indicated a sample size of at least 600 with 80% power at an alpha level of .05. To be able to ensure the power, data of more than 600 participants were collected.

Measures

Task Structure. The task structure scale developed by House and Dessler (1974) was used to measure the degree to which the followers' task stimuli and execution of rules are simple, unambiguous and repetitive. This is a 5-point Likert type scale consisting of 10 items, and higher scores indicate higher task structure. A sample item is "I can generally perform my job using standardized procedures." The reliability coefficient of the scale is reported .72 in the literature.

Core self-evaluation. The core self-evaluation was measured by Judge et al.'s (2003) scale of core self-evaluation. It is a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) consisting of 12 items, and higher scores indicate higher core self-evaluation. It measures four specific core traits which are neuroticism, generalized self-efficacy, self-esteem and locus of control. A sample item is "I complete tasks successfully." The reliability coefficient of the scale is reported as .80 in the literature.

Psychological safety. In the literature, there are two similar scales to measure this variable; one for measuring team level psychological safety, and one for individual level. Since the studies about psychological safety states that leadership is related to both level of safety (e.g. Nembhard & Edmondson, 2006), both scales were used in the current study.

To measure team psychological safety, Edmondson's (1999) psychological safety scale was used. It is a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) consisting of seven items, and higher scores represent higher psychological safety. A sample item is "It is safe to take a risk in this organization.". The reliability coefficient of this scale is .82.

Individual psychological safety was measured by Edmondson and Woolley's (2003) psychological safety scale. The four of the six items of this scale were used because these items focus on the leader-follower relationship, and the other 2 items already existed in the team level psychological safety scale. It is a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), and higher scores represent higher individual psychological safety. A sample item is "If I was thinking about leaving this company to pursue a better job elsewhere, I would talk to my manager about it.". The reliability coefficient of the scale is reported .85 in the literature.

Creative and innovative job performance. Creative and innovative job performance was measured by Janssen's (2001) individual innovative behavior in the workplace scale. It is a 5-point Likert scale (1 = almost never, 5 = almost always) consisting of nine items and higher scores indicate higher innovative performance. The scale has three dimensions which are idea generation, idea promotion and idea realization, and sample items are as follows: "Generating original solutions to problems." for idea generation, "Mobilizing support for

innovative ideas." for idea promotion, "Transforming innovative ideas into useful applications." for idea realization. The reliability coefficient of the total scale is .96. Wording of the items was transformed to enable followers to assess themselves as the original items are developed for the leaders to assess the followers.

Adaptive performance. This variable was measured by the adaptive performance scale developed by Charbonnier-Voirin, El Akremi and Vandenberghe (2010). This 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) consists of 19 items and higher scores indicate higher adaptive performance. The scale measures five facets of adaptive performance which are handling emergencies and unpredictable situations, handling work stress, solving problems creatively, learning, and demonstrating interpersonal adaptability. Since learning is not one of the follower outcomes of this study's interest and creativity was measured by another scale, handling emergencies and unpredictable situations, handling work stress and demonstrating interpersonal adaptability subscales were used to measure adaptive performance, and sample items for these facets are as follows: "I easily change plans to deal with the same situation.", "I stay calm under circumstances where I have to take many decisions at the same time.", and "I learn new ways of doing my job to better cooperate with colleagues." respectively. The reliability coefficient of the total scale is reported .87 in the literature.

Organizational citizenship behaviors. The organizational citizenship behaviors scale developed by Podsakoff and MacKenzie (1989) was used. This 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) consists of 20 items and higher scores illustrate more frequent OCBs. The scale measures five factors which are altruism, courtesy, sportsmanship, conscientiousness and civic virtue, and sample items for each factors are as follows: "I help

others who have heavy workloads.", "I take steps to prevent problems with other workers.", "I consume a lot of time complaining about trivial matters.", "I obey company rules, regulations and procedures even when no one is watching." and "I attend and participate in meetings regarding the organization." respectively. The reliability coefficient is reported .83 in the literature.

Results

Descriptive statistics. Descriptive statistics and reliability coefficients of variables and correlations among them can be seen in Table 3 and 4, respectively.

Table 3

Descriptive Statistics and Reliabilities of the Variables

	α	M	SD	Skewness	Kurtosis
Directive L.	.84	3.76	.86	-.70	.61
Supportive L.	.83	3.59	.92	-.60	.14
Participative L.	.86	3.44	.93	-.65	.17
Ach-oriented L.	.83	3.55	.90	-.54	.11
Task Structure	.63	3.33	.50	.22	.90
Core Self-evaluation	.86	3.41	.69	.34	-.17
Psychological Safety	.81	3.39	.68	-.41	.91
CIP	.95	3.48	.87	-.58	.38
AP	.89	3.89	.60	-.37	.17
OCB	.87	3.81	.55	-.07	-.45

Note. L = Leadership, α = Cronbach's alfa, M = Mean, SD = Standard Deviation, CIP = Creative and Innovative Performance, AP = Adaptive Performance, OCB = Organizational Citizenship Behaviors.

Table 4

Correlations among Variables

	1	2	3	4	5	6	7	8	9	10
1. Directive L.	1									
2. Supportive L.	.60**	1								
3. Participative L.	.44**	.67**	1							
4. Ach-oriented L.	.67**	.63**	.56**	1						
5. Task Structure	.16**	-.06	-17**	-.08*	1					
6. Core Self-evaluation	.14**	.20**	.17**	.16**	.08*	1				
7. Psychological Safety	.45**	.30**	.45**	.40**	.06	.40**	1			
8. CIP	.36**	.39**	.53**	.45**	-.25**	.22**	.26**	1		
9. AP	.48**	.40**	.37**	.43**	.09*	.35**	.38**	.53**	1	
10. OCB	.36**	.28**	.20**	.28**	.19**	.43**	.45**	.32**	.72**	1

Note. * $p < .05$, ** $p < .01$. L = Leadership, CIP = Creative and Innovative Performance, AP = Adaptive Performance, OCB = Organizational Citizenship Behaviors.

Since the reliability of scale that measures task structure variable was low (i.e. .63), reverse coded items were excluded to check if the reliability increases or not; however, there was almost no increase. Thus, full scale was used in both hypotheses testing and post-hoc analyses.

Hypotheses testing. Hypotheses were tested by path analysis which is a specific case of structural equation modeling (SEM). M-plus 6 was used for these analyses (Muthén & Muthén, 2005). In the model, a-path refers to the effect of independent variable on the mediator variable (i.e each leadership behavior on psychological safety), b-path refers to the effect of the mediator on the dependent variable (i.e. psychological safety on CIP, AP and

OCB), c-path refers to the total effect of independent variable on the dependent variable without the influence of the mediator variable (i.e each leadership behavior on CIP, AP, and OCB without the influence of psychological safety), c' path refers to the effect of the independent variable on dependent variable controlling for the mediator (i.e. each leadership behavior on CIP, AP and OCB controlling for the psychological safety) and ab-path refers to the mediated effect of independent variable on dependent variable (i.e. each leadership behavior on CIP, AP and OCB through psychological safety). The bootstrapping technique was used (1000 times) for mediation effects because at the low values of a and b, there is excess kurtosis and skewness in the distribution of the mediated effect (Kisbu-Sakarya, MacKinnon, & Miocevic, 2014). Moreover, the predictor variables (i.e. directive leadership, supportive leadership, participative leadership, achievement-oriented leadership, task structure, core self-evaluation, psychological safety) were centered to minimize the potential multicollinearity problem and to better interpret the results (Aiken & West, 1991).

Four different model testing was made, using each leadership behavior variable one by one. In each model, one of the leadership behaviors was used as independent variable, and the two moderators (i.e. task structure and core self-evaluation) were added as covariates to the b-path of the model to examine the relationship between psychological safety and the follower outcomes (i.e. CIP, AP, OCB) by controlling their effects, because different studies show the positive relationship between core self-evaluation and workplace creativity (Chiang, Hsu, & Hung, 2013), AP and OCB (Bowling, Wang, Li, 2012; Chang, Ferris, Johnson, Rosen, & Tan, 2012); positive relationship between task complexity and OCB (Debusscher, Hofmans, & De Fruyt, 2017); and negative relationship between task structure and creative performance (Erez, Nouri, 2010). Thus, both of the moderators are the variables that could have direct effect on the follower outcomes. The M-plus scripts of the analyses can be found in Appendix D. Indirect, direct and total effects of the models are shown in Table 5.

Directive leadership. As Hypothesis 1 stated, it was tested if directive leadership is most strongly associated with psychological safety under conditions of low task structure and low core self-evaluation, and if psychological safety mediates the relationship between directive leadership and CIP, AP, and OCB. The model had good fit statistics, $\chi^2(12) = 33.431$, $p < .001$, *CFI* = .984, *TLI* = .955, *RMSEA* = .053, *SRMR* = .027.

First, the mediation analysis showed that two of the indirect effects were significant, so directive leadership was related to psychological safety, which in turn was related to AP, and OCB (β = .05, 95% CI [.01, .08], β = .09, 95% CI [.04, .13], respectively). Second, the three-way interaction among directive leadership, task structure and core self-evaluation were examined to see if the relationship between directive leadership and psychological safety changes across different levels of the moderators, and the results showed that the interaction was non-significant, β = -.07, p = .11. Thus, data partially supported Hypothesis 1.

Supportive leadership. To test Hypothesis 2, it was tested if supportive leadership is most strongly associated with psychological safety under conditions of high task structure and low core self-evaluation, and if psychological safety mediates the relationship between supportive leadership and CIP, AP, and OCB. The created model had good fit statistics, $\chi^2(12) = 28.858$, $p < .01$, *CFI* = .988, *TLI* = .967, *RMSEA* = .047, *SRMR* = .021.

First, the mediation analysis showed that two of the indirect effects were significant, so supportive leadership was related to psychological safety, which in turn was related to AP, and OCB (β = .06, 95% CI [.01, .12], β = .14, 95% CI [.07, .20], respectively). Second, the three-way interaction among supportive leadership, task structure and core self-evaluation were examined to see if the relationship between supportive leadership and psychological

safety changes across different levels of the moderators, and the results showed that the interaction was non-significant (β = -.02, p = .74). Data partially supported Hypothesis 2.

Participative leadership. For hypothesis 3, it was tested if participative leadership is most strongly associated with psychological safety under conditions of low task structure and high core self-evaluation, and if psychological safety mediates the relationship between supportive leadership and CIP, AP, and OCB. This model had good fit statistics, $\chi^2(12)$ = 36.653, p < .001, *CFI* = .982, *TLI* = .95, *RMSEA* = .057, *SRMR* = .019.

First, the results of mediation analysis showed that the two of the three indirect effects were significant; participative leadership was related to psychological safety, which in turn was related to AP, and OCB (β = .07, 95% CI [.03, .10], β = .11, 95% CI [.07, .16], respectively). Second, the three-way interaction among participative leadership, task structure and core self-evaluation were examined to see if the relationship between participative leadership and psychological safety changes across different levels of the moderators, and the results showed that the interaction was not significant (β = -.001, p = .99), meaning that data partially supported Hypothesis 3.

Achievement-oriented leadership. To test the hypothesis 4, it was tested if achievement-oriented leadership is most strongly associated with psychological safety under conditions of high task structure and high core self-evaluation, and if psychological safety mediates the relationship between achievement-oriented leadership and CIP, AP, and OCB. The model also had good fit statistics, $\chi^2(12)$ = 34.446, p < .001, *CFI* = .983, *TLI* = .951, *RMSEA* = .054, *SRMR* = .026.

First, the results of mediation analysis showed that two of the indirect effects were significant; achievement-oriented leadership was related to psychological safety, which in turn was related to AP and OCB (β = .05, 95% CI [.02, .08], β = .08, 95% CI [.04, .12], respectively). Second, the three-way interaction among achievement-oriented leadership, task structure and core self-evaluation were analyzed to see if the relationship between achievement-oriented leadership and psychological safety changes across different levels of the moderators, and the results showed that the interaction was not significant (β = -.02, p = .62). Thus, data partially supported Hypothesis 4.

Table 5

Direct, Indirect, Total Effects, and 95% Confidence Intervals

		Indirect via Psy. Safety	Direct effect	Total effect
Directive Leadership	CIP	.02	.36***	.38***
		[-.03, .07]	[.25, .46]	[.28, .47]
	AP	.05**	.39***	.43***
		[.01, .08]	[.30, .47]	[.35, .51]
	OCB	.09***	.22***	.31***
		[.04, .13]	[.13, .31]	[.22, .39]
Supportive Leadership	CIP	.01	.35***	.36***
		[-.07, .06]	[.24, .45]	[.25, .43]
	AP	.06*	.29***	.35***
		[.01, .12]	[.19, .39]	[.27, .43]
	OCB	.14***	.10*	.23***
		[.07, .20]	[.001, .19]	[.15, .31]
Participative Leadership	CIP	.01	.48***	.49***
		[-.05, .03]	[.40, .57]	[.39, .55]
	AP	.07***	.27***	.34***
		[.03, .10]	[.19, .36]	[.26, .42]
	OCB	.11***	.08	.19***
		[.07, .16]	[-.01, .17]	[.10, .28]
Achievement-	CIP	.02	.38***	.40***

oriented Leadership		[-.02, .06]	[.28, .47]	[.31, .49]
	AP	.05***	.35***	.40***
		[.02, .08]	[.27, .43]	[.32, .48]
	OCB	.08***	.17**	.25***
		[.04, .12]	[.09, .25]	[.17, .32]

Note. * p < .05; ** p < .01; *** p < .001. Values between the brackets indicate bias-corrected bootstrap 95% confidence intervals. Psy. Safety = Psychological Safety, CIP = Creative and innovative performance, AP = Adaptive performance, OCB = Organizational citizenship behaviors.

Post-Hoc Analyses

In further analyses, psychological safety variable was excluded from the model, and different relationships between leadership behaviors (i.e. directive, supportive, participative, achievement-oriented), moderators (i.e. task structure, core self-evaluation) and follower outcomes (i.e. CIP, AP, OCB) were examined. First, the interaction effects of leadership behaviors, task structure and core self-evaluation on each of the follower outcomes were analyzed (i.e. three-way interactions among leadership behaviors and two moderators). Second, as previous studies on path-goal theory have done (e.g. Abdel-Halim,1981; Greene, 1979; Levanoni & Knoop, 1985; Wofford & Liska, 1993), the individual moderating effects on the relationship between each leadership behavior and each follower outcome were analyzed separately (i.e. two-way interactions between leadership behaviors and each moderator) (see Figure 2). Since there were several results of these analyses, only significant ones were reported below; however, the results of all post-hoc analyses are presented in Table 6.

Moderating effect of task structure and core self-evaluation. The moderation of both task structure and core self-evaluation on the relationship between each leadership behavior and each follower outcome was examined with multiple regression analyses, using Mplus. (see Figure 2)

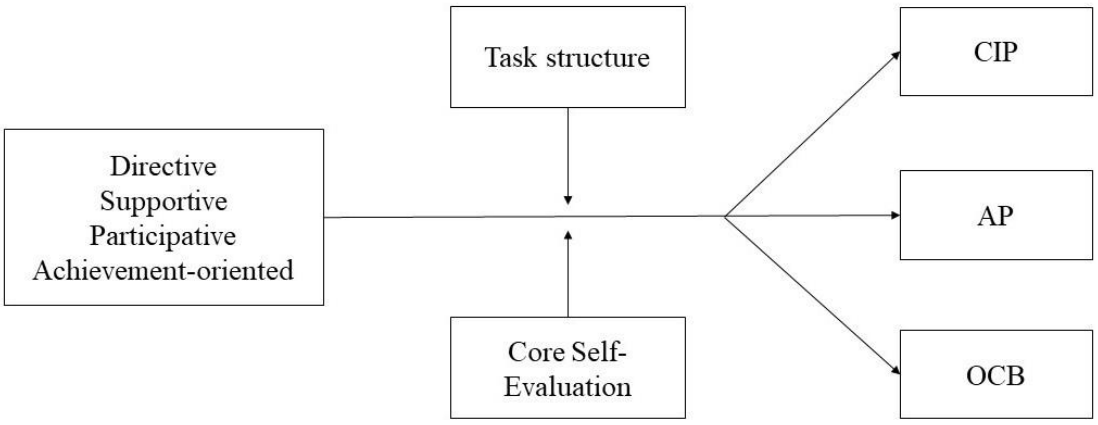

Figure 2. Post-hoc model

Note. CIP = Creative and innovative performance, AP = Adaptive performance, OCB = Organizational citizenship behaviors.

First, interactions among directive leadership, task structure and core self-evaluation on each follower outcome were analyzed, and it was found that three-way interaction among directive leadership, task structure and core self-evaluation on OCB was significant (β = -.09, p = .02), which means that the relationship between directive leadership and OCB changes across different levels of task structure and core self -evaluation. To better understand this three-way interaction, following Aiken and West (1991), simple slopes at two different levels of task structure and core self-evaluation (1 standard deviation above and below the mean) were estimated (see Figure 3). The graph shows that, for employees with low core self-evaluation, as the task structure increases, the relationship between directive leadership and OCB slightly increases; however, for employees with high core self-evaluation, as the task structure increases, the relationship between directive leadership and OCB decreases.

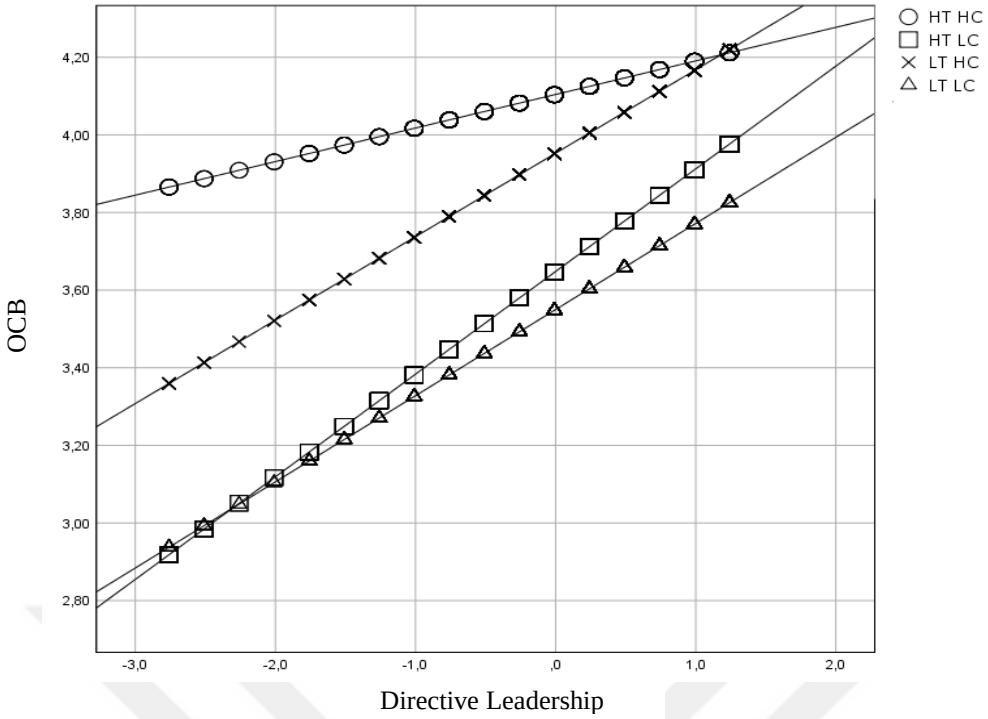

Figure 3. Simple slopes of the interaction among directive leadership, task structure and core self-evaluation on OCB

Note. HT HC = High task structure and high core self-evaluation, HT LC = High task structure and low core self-evaluation, LT HC = Low task structure and high core self-evaluation, LT LC = Low task structure and low core self-evaluation, OCB = Organizational citizenship behaviors.

Second, the analyses for interactions among supportive leadership, task structure and core self-evaluation on each follower outcome showed that three-way interaction among supportive leadership, task structure and core self-evaluation on OCB was marginally significant (β = -.08, p = .10), meaning that the relationship between supportive leadership and OCB changes across different levels of task structure and core self -evaluation. Simple slopes at two different levels of task structure and core self-evaluation (1 standard deviation above and below the mean) were estimated (see Figure 4) to see the changes of the relationship between supportive leadership and OCB as the levels of moderators change. It is seen from the graph that, for employees with low core self-evaluation, even though the task structure of their job increases, there is almost no change in the relationship between

supportive leadership and OCB. However, for employees with high core self-evaluation, as the task structure increases, the relationship between supportive leadership and OCB decreases.

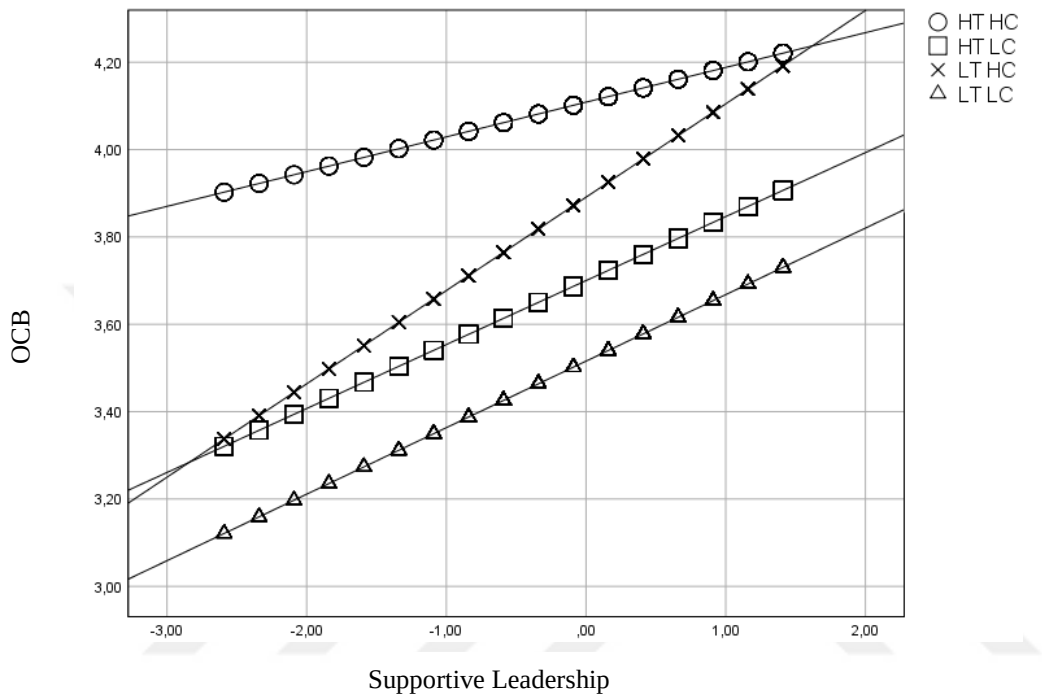

Figure 4. Simple slopes of the interaction among supportive leadership, task structure and core self-evaluation on OCB.

Note. HT HC = High task structure and high core self-evaluation, HT LC = High task structure and low core self-evaluation, LT HC = Low task structure and high core self-evaluation, LT LC = Low task structure and low core self-evaluation, OCB = Organizational citizenship behaviors.

Third, three-way interactions among participative leadership, task structure and core self-evaluation on each follower outcome were analyzed, and the results show that the interactions among participative leadership, task structure and core self-evaluation on AP and OCB were significant (β = -.11, p = .05; β = -.14, p = .001, respectively). To understand these three-way interactions, simple slopes at two different levels of task structure and core self-evaluation (1 standard deviation above and below the mean) were drawn (see Figure 5 and 6,

respectively). Thus, it was examined the changes of the relationship between participative leadership and AP and OCB as the levels of two moderators change. Figure 5 shows that, for employees who have low core self-evaluation, as the task structure increases, the relationship between participative leadership and AP decreases quite slightly; however, for employees who have high core self-evaluation, as the task structure increases, the relationship between participative leadership and AP decreases.

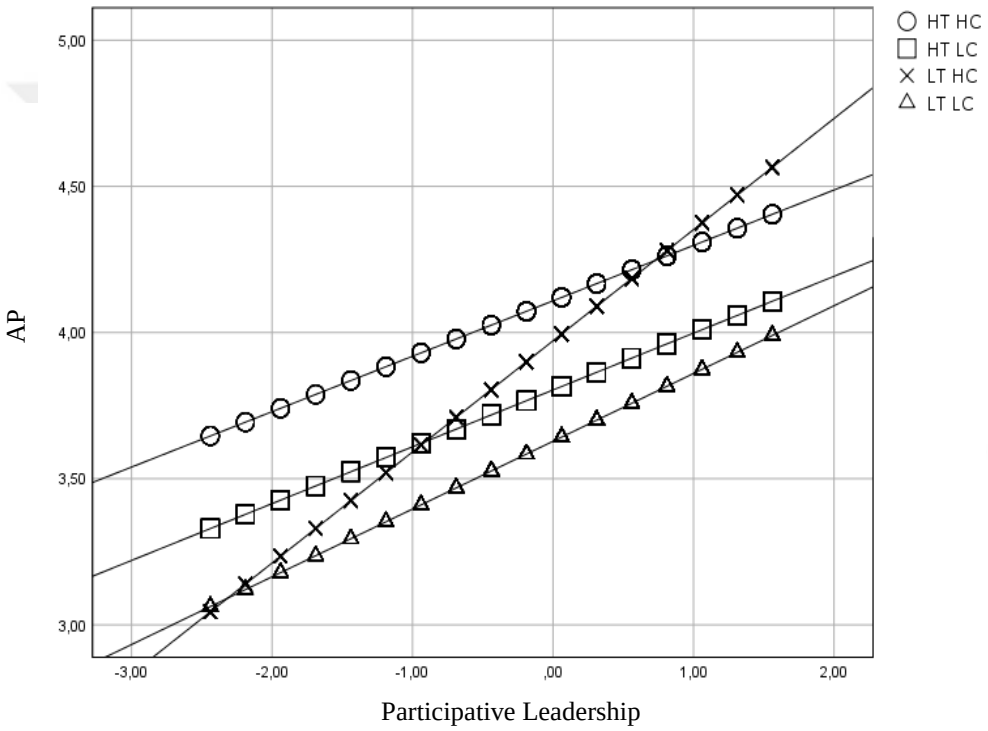

Figure 5. Simple slopes of the interaction among participative leadership, task structure and core self-evaluation on AP

Note. HT HC = High task structure and high core self-evaluation, HT LC = High task structure and low core self-evaluation, LT HC = Low task structure and high core self-evaluation, LT LC = Low task structure and low core self-evaluation, AP = Adaptive performance.

Lastly, as Figure 6 shows, for employees with low core self-evaluation, as the task structure increases, the relationship between participative leadership and OCB increases;

however, for employees who have high core self-evaluation, as the task structure increases, the relationship between participative leadership and AP decreases.

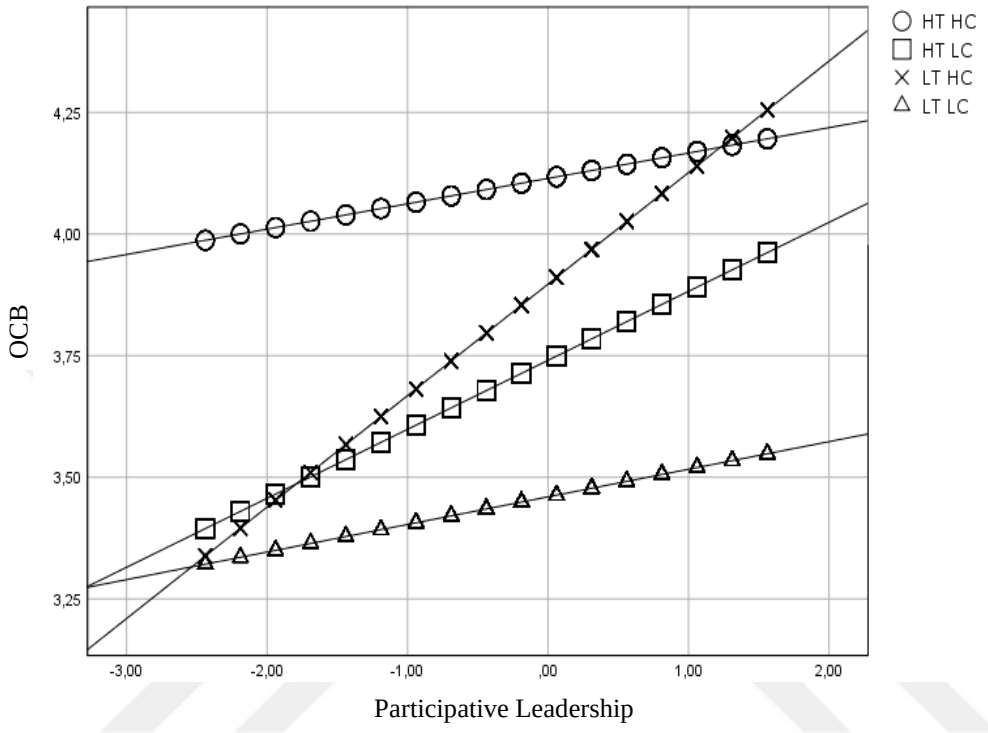

Figure 6. Simple slopes of the interaction among participative leadership, task structure and core self-evaluation on OCB

Note. HT HC = High task structure and high core self-evaluation, HT LC = High task structure and low core self-evaluation, LT HC = Low task structure and high core self-evaluation, LT LC = Low task structure and low core self-evaluation, OCB = Organizational citizenship behaviors.

Moderating effect of task structure. The moderating effect of task structure variable on the relationships between each leadership behavior and each follower outcome were examined, because although joint effects of task structure and core self-evaluation on the relationship between leadership and OCB was found, examining task structure's single effect not only on the relationship between leadership and OCB but the other outcomes could be an important contribution to understand the contingent effects of the leadership behaviors of path-goal theory. Thus, multiple regression analyses were conducted using Mplus 6. Core

self-evaluation variable was added as a covariate to the analyses to eliminate its effect on the relationships.

First, it was found that task structure negatively moderated the relationship between directive leadership and CIP, β = -.08, p = .02. Also, the moderation of task structure on the relationship between directive leadership and AP was marginally significant, β = -.06, p = .09. Thus, at the mean level of core self-evaluation, as task structure of a follower increases, the relationship between directive leadership and CIP and AP of the follower decreases.

Second, task structure negatively moderated the relationship between supportive leadership and AP, β = -.09, p = .01.

Third, the relationship between participative leadership and AP was negatively moderated by task structure, β = -.08, p = .03.

Lastly, task structure had a negative moderating effect on the relationships between achievement-oriented leadership and AP and OCB (β = -.12, p = .001; β = -.11, p = .003, respectively).

Moderating effect of core self-evaluation. The moderation of core self-evaluation variable on the relationships between each leadership behavior and each follower outcome were examined by multiple regression analyses using Mplus 6. Task structure variable was added as a covariate to the analyses to eliminate its effect on the relationships.

First, the relationships between directive leadership and CIP, AP, and OCB were negatively moderated by core self-evaluation (β = -.09, p = .007; β = -.09, p = .005; β = -.13, p < .001, respectively), meaning that at the mean level of task structure, as core self-evaluation of a follower increases, the relationship between directive leadership and CIP, AP, and OCB decreases.

Second, core self-evaluation negatively moderated the relationship between supportive leadership and CIP of the follower, β = -.09, p = .01.

Third, core self-evaluation had a negative moderating effect on the relationship between achievement-oriented leadership and CIP, AP, and OCB (β = -.08, p = .02; β = -.10, p = .005; β = -.10, p = .005, respectively).

Table 6

The Summary of Post-Hoc Analyses

		Three-way interactions with TS and CSE	Two-way interactions with TS	Two-way interactions with CSE
Directive Leadership	CIP	.02	-.08*	-.09**
	AP	-.02	-.06	-.09**
	OCB	-.09*	-.05	-.13***
Supportive Leadership	CIP	.05	-.04	-.09**
	AP	-.04	-.09*	-.02
	OCB	-.06	-.06	-.03
Participative Leadership	CIP	.04	.01	-.05
	AP	-.08*	-.08*	.02
	OCB	-.14**	-.02	-.01
Achievement-oriented Leadership	CIP	.05	-.03	-.08*
	AP	-.03	-.12**	-.10**
	OCB	.01	-.11**	-.10**

Note. * p < .05; ** p < .01; *** p < .001. The first column of numbers represents the standardized coefficients of three-way interactions among each leadership behaviors, task structure and core self-evaluation, the second column is the standardized betas of moderating effect of task structure, and the last column represent the standardized coefficients of the moderating effect of core self-evaluation. TS = Task structure, CSE = Core self-evaluation, CIP = Creative and innovative performance, AP = Adaptive performance, OCB = Organizational citizenship behaviors.

Discussion

This study aimed at providing a long-overdue empirical evidence for the path-goal theory. The unique contribution that were aimed at making were testing if (1) path-goal theory led to contemporary work outcomes (i.e. CIP, AP, OCB), (2) psychological safety was a mechanism between leadership behaviors of path-goal theory and these outcomes, and (3) two contingencies (i.e. task structure, core self-evaluation) moderated the relationships between leadership behaviors and psychological safety. Thus, it was examined if directive, supportive, participative and achievement-oriented leadership behaviors, in combination of different levels of task structure and core self-evaluation, most strongly associated with psychological safety. Furthermore, it was tested if psychological safety partially mediated the relationship between each leadership behaviors and CIP, AP, and OCB.

The results provided partial support for the predicted relationships. The first set of results were concerning leadership behaviors, psychological safety and follower outcomes. As predicted, it was found that each leadership behavior had positive relationships with AP and OCB through psychological safety. It can be concluded from this result that, each of the four leadership behaviors are effective in creating psychological safety for the followers and this can lead to the two important follower outcomes such as AP and OCB. It seems that in today's organizations, some of the important follower outcomes are related to psychological safety, and the leadership behaviors of path-goal theory are successful in creating psychological safety. Once these four behaviors create psychological safety, followers adapt an event, task or environment more easily (i.e. AP) and also, followers tend to exhibit volunteer extra role behaviors that will benefit the organization (i.e. OCB). This result can be considered as an important contribution in terms of understanding the mechanisms of the positive effects of leadership. One of the major criticisms towards the leadership literature is that it is frequently asked 'what' the effects of a leadership are; but the question of 'why'

positive leadership behaviors improve different types of follower outcomes is not studied enough (e.g. Gottfredson & Aguinis, 2017). This study demonstrated that one the answers to the question of 'why' is psychological safety. On the other hand, the data did not support for the expected relationship between leadership behaviors and CIP through psychological safety. This may result from the differing nature of CIP compared to the other two outcomes. Adaptation of the follower to an environment (i.e. AP) or assuming extra role behaviors (i.e. OCB) in an environment can be affected by how the follower feels in that environment. For instance, if the follower feels worried, unhappy or restricted in his/her work environment, s/he may not adapt this environment or the tasks that the environment require, and s/he may not want to exhibit OCB to benefit this environment. However, it would be observed an easier adaptation and more motivation for OCB, if the follower feels happy, peaceful and free in the work environment. Due to this fact, it is natural that these two outcomes are affected by psychological safety as psychological safety by definition, means people are comfortable being themselves in the environment they operate in. Unlike these two outcomes, CIP is more task-related, because CIP means creating and actualizing new and improved ways of doing tasks. Thus, compare to other two outcomes (i.e. AP and OCB), the level of CIP may depend more on the follower's task itself, rather than the environment that the follower operates in. This may be the reason why there has not been a similar relationship with psychological safety. As an environmental factor, psychological safety may not be as effective in eliciting CIP as it is in AP and OCB. It is understood that, leadership has a significant direct relationship with followers' CIP, but this seem to occur through a mechanism other than psychological safety.

The second set of results were about the task structure and core self-evaluation contingencies. The expectation that task structure and core self-evaluation moderate the relationship between leadership behaviors and psychological safety was not met. This non-

significant result can be explained as follows. Although the four leadership behaviors are different from each other, they are all positive behaviors with respect to psychological safety and they have the same positive effect on psychological safety regardless of the task structure and core self-evaluation of followers. Thus, leaders who have followers with different levels of task structure and core self-evaluation can use these four behaviors to elicit psychological safety.

Analyses used to test the hypotheses showed that there were significant direct effects of each leadership behaviors on each follower outcomes. This fact led to the question whether contingencies have a role on the direct relationship between leadership and the outcomes. Three sets of post-hoc analyses were conducted to answer this question. The first set of analyses tested the joint moderation of task structure and core self-evaluation on the relationship between leadership and outcomes, while the second set examined the moderating effect of *task structure* on the relationship between leadership and outcome, and the third tested the moderation of *core self-evaluation* on leadership and follower outcomes relationship.

The first set of analyses showed that task structure and core self-evaluation moderated the relationships between; (1) directive leadership and OCB, (2) supportive leadership and OCB, and (3) participative leadership and OCB. The change of the relationships had the same pattern for the two moderators such that, for employees who have low core self-evaluation, as the task structure increases, the relationship between leadership and OCB either did not change or showed small changes such as increasing or decreasing by a small margin. However, for employees who have high core self-evaluation, as the task structure increases, the relationship between leadership and OCB decreases. Let us speculate on this result with two hypothetical employees: imagine an employee with high core self-evaluation. This employee has high self-esteem, high generalized self-efficacy, internal locus

of control and high emotional stability. When this employee has low task structure, meaning that the person has a more ambiguous and complex task, the employee would focus on that task, because it is demanding. To exhibit extra role behaviors (i.e. OCB) that would benefit the organization, on top of handling this demanding task, the employee would need the support and motivation from the leader. However, when this employee has high task structure, a repetitive and unambiguous task, there may not be a need to spend much energy on this task. This employee is trusting him/herself and that s/he can accomplish whatever is required of him/her (i.e. high generalize self-efficacy), believe that what the results of his/her actions depend completely on him/her (i.e. internal locus of control). For this reason, exhibiting OCB, in addition to going through a highly structured task, is not an onerous thing to do for the employee. Therefore, there is not much need for the support and motivation from his/her leader. Now, imagine an employee with low core self-evaluation. This employee has low self-esteem, low generalized self-efficacy, external locus of control and low emotional stability. This employee may need a leader whether they have a low structured task or high structured task. This is due to the fact that, this employee does not have full confidence in him/herself as to accomplish something on his/her own and s/he is less stable emotionally (i.e. low generalize self-efficacy and low emotional stability) and s/he believe that what s/he is doing and the results of his/her actions depend on external factors (i.e. external locus of control). Even if the employee's level of task structure changes, because, compared to an employee with high core self-evaluation, s/he would have more difficulty in accomplishing tasks, it is possible that s/he would always need the support and motivation of a leader. The reason that this relationship is seen in directive, supportive and participative leadership but not in achievement-oriented leadership may be because achievement-oriented leadership has a different nature than the other three. Directive, supportive and participative leadership behaviors include behaviors such as guiding the follower, behaving friendly, and

making joint decisions. The follower may see them as more motivating and helpful leaders. The supportiveness and helpfulness of these leaders may stimulate OCB in followers. On the other hand, achievement-oriented leadership includes more demanding behaviors such as setting high standards and challenging the follower. As a result, this behavior may not provide sufficient time and motivation needed to exhibit OCB.

Second set of post hoc analyses involve the tests of the moderating effect of task structure on the relationship between leadership behaviors and follower outcomes. The results showed that task structure negatively moderated half of the relationships (i.e. six of twelve relationships), which are the relationships between directive and CIP, directive and AP, supportive and AP, participative and AP, achievement-oriented and AP, and achievement-oriented and OCB. Among these relationships, it is notable to observe that the relationship between every leadership behavior and AP were negatively moderated by task structure, which means that as task structure of the followers increases, the relationship between each leadership behavior and AP decreases. This can be interpreted as follows; when an employee has a low task structure (i.e. more complex and ambiguous task), employee may need leaders' guidance to adapt a new job, event, or environment, because the structure of the task does not provide the guidance. However, when the employee has a highly structured task (i.e. more repetitive and unambiguous task), his/her need for the leader in order to adapt decreases, because the task itself provides the guidance the employee may need.

Third type of post-hoc analyses tested the moderation of core self-evaluation on the relationship between leadership behaviors and follower outcomes. It was found that core self-evaluation negatively moderated the relationships between directive and CIP, directive and AP, directive and OCB, supportive and CIP, achievement-oriented and CIP, achievement-oriented and AP, achievement-oriented and OCB. It is seen that most of these negatively moderated relationships involved directive and achievement-oriented leadership behaviors.

Due to the fact that these two leadership behaviors consist of more leader-centric behaviors such as giving close guidance, setting high standards, the employee's need for them may decrease as the employee's core self-evaluation increases. This is because, since the employee has internal locus of control and high self-efficacy, they may prefer a working style that they are involved in the leadership. The non-significant moderation of core self-evaluation on the relationship between participative leadership and outcomes also support this speculation. This result means that the relationship between participative leadership and outcomes are the same regardless of core self-evaluation. This result means that as core self-evaluation of a person increases, the effects of directive and achievement-oriented leaderships decreases but the positive effect of participative behavior remains the same.

When the results of the second and third sets of post hoc analyses are examined as a whole, it is seen that all the results, including the significant and non-significant ones, had a negative sign, which means that as these contingencies increase, the relationship between leadership behaviors and follower outcomes decreased. These results can be explained by substitutes of leadership theory of Kerr and Jermier (1978). This theory states that some individual, task, and organizational factors can enhance, neutralize, or substitute for leader behaviors. According to their definition, 'a substitute is something that reduces leaders' ability to influence subordinate criterion variables and, in effect, replaces leader influence' (Kerr & Jermier, 1978, p.377). Similarly, in this study, task structure and core self-evaluation became the factors that reduce the effect of the leadership behaviors on employee outcomes. Although they did not completely replace the leader, it can be concluded that they play the role of substitutes that assume the role of the leader.

In conclusion, even though the results did not fully support the hypotheses, they supported (1) never-before-tested mechanism of path goal theory (2) the interactions among leadership task structure and core self-evaluation on OCB, and (3) substitutional effects of

task structure and core self-evaluation on the relationship between leadership and follower outcomes.

Limitations and Future Research

The present study poses several limitations. First, cross-sectional design was used to test the relationship between leadership behaviors and follower outcomes; however, this type of a design does not allow to understand the causal mechanism between leadership and outcomes. Second, since the data were collected from followers only, this may have led to common method variance problem. Lastly, the fact that followers rated their own performance dimensions (i.e. CIP, AP, OCB) may have led to biased performance data.

In order to overcome the above-mentioned limitations, future studies may prefer to use longitudinal design to be able to claim causality, and by collecting data both from the leaders and their followers, they can make a dyadic or matched data analysis to prevent biases. In addition to conducting studies using different designs, future studies may discover different mechanisms between the leadership behaviors of path-goal theory and follower outcomes. To our knowledge, because this study is the first testing a mediator between this relationship, future studies could contribute to this area. Lastly, in addition to task structure and core self-evaluation, different moderators that could play a substitutional role for leadership for 21st century follower outcomes could be examined, because technological developments may create new substitutes in 21st century and the next ones. Therefore, organizations that expect these 21st century outcomes from their followers would benefit from these substitutes. Use of these could enable some of the followers to be more autonomous, needing the leader less, and this would help leaders be more target-oriented and efficient as

they would focus on situations and followers who lack substitutes, instead of trying to lead all of them.

Finally, the implication of the present study for practitioners could be the need for revising their trainings and recruitment processes. In the leadership trainings which based on contingency theories, the contingencies and choosing the correct leadership behaviors considering them are taught. However, rather than focusing on the contingencies, eliciting psychological safety in followers using the four positive leadership behaviors (i.e. directive, supportive, participative, achievement-oriented) could be the main focus of the trainings, because it is seen that psychological safety is one way to reach 21st century outcomes. Moreover, the substitutes for leadership could be taught in the trainings, so that leaders could understand the situations and followers who need their leadership more. Lastly, these substitutes may also be used in the recruitment and selection processes of organizations. For instance, follower characteristics that have substitutional role, such as core self-evaluation, may be used as selection criteria by the organizations that prefer more autonomous employees who need a leader less.

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APPENDICES

Appendix A

The Scales of Pilot Study

1. Have you been working with your current leader (manager) at work for at least six months?

a) Yes

b) No

2. What is your gender?

a) Male

b) Female

c) Other

d) Prefer not to answer

3. What is your age?

4. What is your educational level?

a) Did not finish/Less than high school

b) High school or equivalent degree

c) Some college

d) College/University degree

e) Post-graduate degree

5. What is your current employment status?

a) Employed full time

b) Employed part time

c) Self-employed

d) Unemployed

6. How many years have you been working?

7. How many years have you been working in the organization you are currently working?

Part 1. The behaviors of my leader

1 = Almost Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost Always

Section 1

My manager/leader…

1. consults with me when facing a problem.

2. listens receptively to my ideas and suggestions.

3. asks for suggestions from me concerning how to carry out assignments.

4. acts without consulting me.

5. asks me for suggestions on what assignments should be made.

Section 1

My manager/leader…

6. lets me know that s/he expects me to perform at my highest level.

7. shows that s/he has doubts about my ability to meet most objectives.

8. encourages continual improvement in my performance.

9. consistently sets challenging goals for me to attain.

10. sets goals for my performance that are quite challenging.

Section 1

My manager/leader…

11. maintains a friendly working relationship with me.

12. does little things to make it pleasant to be a member of the group.

13. helps me overcome problems that stop me from carrying out my tasks.

14. behaves in a manner that is thoughtful of my personal needs.

15. says things that hurt my personal feelings.

Section 1

My manager/leader…

16. lets me know what is expected of me.

17. informs me about what needs to be done and how it needs to be done.

18. asks me to follow standard rules and regulations.

19. explains the level of performance that is expected of me.

20. gives vague explanations of what is expected of me on the job.

Appendix B

Factor Loadings of Leadership Questionnaire

Table 1

Factor Loadings of Path-Goal Leadership Questionnaire

	Loadings			
Items	Dir.	Sup.	Par.	Ach.
1. lets me know what is expected of me.	.798			
5. informs me about what needs to be done and how it needs to be done.	.794			
9. asks me to follow standard rules and regulations.	.542			
14. explains the level of performance that is expected of me.	.817			
18. gives vague explanations of what is expected of me on the job.	-.166			
2. maintains a friendly working relationship with me.		.611		
8. does little things to make it pleasant to be a member of the group.		.712		
11. say things that hurt my personal feelings.		-.059		
15. helps me overcome problems that stop me from carrying out my tasks.		.673		
20. behaves in a manner that is thoughtful of my personal needs.		.293		
3. consults with me when facing a problem.			.784	
4. listens receptively to my ideas and suggestions.			.763	
7. act without consulting me.			.145	
12. asks for suggestions from me concerning how to carry out assignments.			.787	
17. asks me for suggestions on what assignments should be made.			.854	
6. lets me know that s/he expects me to perform at my highest level.				.782
10. sets goals for my performance that are quite challenging.				.523
13. encourages continual improvement in my performance.				.823
16. shows that s/he has doubts about my ability to meet most objectives.				-.257
19. consistently sets challenging goals for me to attain.				.647

Note. Standardized factor loadings are reported in the table. Dir. = Directive leadership, Sup. = Supportive leadership, Par. = Participative leadership, Ach. = Achievement-oriented leadership

Table 2

Factor Loadings of Path-Goal Leadership Questionnaire without reverse coded items

Items	Loadings			
	Dir.	Sup.	Par.	Ach.
1. lets me know what is expected of me.	.812			
5. informs me about what needs to be done and how it needs to be done.	.778			
9. asks me to follow standard rules and regulations.	.514			
14. explains the level of performance that is expected of me.	.792			
2. maintains a friendly working relationship with me.		.620		
8. does little things to make it pleasant to be a member of the group.		.714		
15. helps me overcome problems that stop me from carrying out my tasks.		.659		
20. behaves in a manner that is thoughtful of my personal needs.		.321		
3. consults with me when facing a problem.			.786	
4. listens receptively to my ideas and suggestions.			.780	
12. asks for suggestions from me concerning how to carry out assignments.			.787	
17. asks me for suggestions on what assignments should be made.			.838	
6. lets me know that s/he expects me to perform at my highest level.				.771
10. sets goals for my performance that are quite challenging.				.495
13. encourages continual improvement in my performance.				.809
19. consistently sets challenging goals for me to attain.				.602

Note. Standardized factor loadings are reported in the table. Dir. = Directive leadership, Sup. = Supportive leadership, Par. = Participative leadership, Ach. = Achievement-oriented leadership

Appendix C

The Scales of Main Study

1. Have you been working with your current leader (manager) at work for at least six months?

a) Yes

b) No

2. What is your gender?

a) Male

b) Female

c) Other

d) Prefer not to answer

3. What is your age?

4. What is your educational level?

a) Did not finish/Less than high school

b) High school or equivalent degree

c) Some college

d) College/University degree

e) Post-graduate degree

5. What is your current employment status?

a) Employed full time

b) Employed part time

c) Self-employed

d) Unemployed

6. How many years have you been working?

7. How many years have you been working in the organization you are currently working?

Part 1. The behaviors of my leader

1 = Almost Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost Always

Section 1

My manager/leader…

1. consults with me when facing a problem.

2. listens receptively to my ideas and suggestions.

3. asks for suggestions from me concerning how to carry out assignments.

4. asks me for suggestions on what assignments should be made.

Section 1

My manager/leader…

5. lets me know that s/he expects me to perform at my highest level.

6. encourages continual improvement in my performance.

7. consistently sets challenging goals for me to attain.

8. sets goals for my performance that are quite challenging.

Section 1

My manager/leader…

9. maintains a friendly working relationship with me.

10. does little things to make it pleasant to be a member of the group.

11. helps me overcome problems that stop me from carrying out my tasks.

12. behaves in a manner that is thoughtful of my personal needs.

Section 1

My manager/leader…

13. lets me know what is expected of me.

14. informs me about what needs to be done and how it needs to be done.

15. asks me to follow standard rules and regulations.

16. explains the level of performance that is expected of me.

Part 1. My job

1 = Almost Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost Always

1. Problems which arise on my job can generally be solved by using standard procedures.

2. I can generally perform my job using standardized methods.

3. Problems which I encounter in my job can generally be solved in a number of different ways.

4. The tasks of some individuals are more "structured" than others: the goals are clearer, the methods to be used are more understood, and the problems are more repetitive and less unique, for example. Would you please rate what you feel is the degree of "structure" of your job by circling the best response?

a) Very low structure

b) Low

c) Medium

d) High

e) Very high structure

5. What is the average time it takes for you to complete a typical assignment?

a) One day or less

b) Between 1 and 3 days

c) Between 4 days and 7 days

d) Between 1 and 2 weeks

e) Longer than 2 weeks

6. How repetitious are your duties?

a) Very little

b) Some

c) Quite a bit

d) Very much

e) Almost completely

7. How similar are the tasks you perform in a typical work day?

a) Almost all the same

b) Quite a few the same

c) Only a few the same

d) Very few the same

e) Almost all different

8. If you were to write a list of the exact activities you would be confirmed by on an average workday, what percent of these activities do you think would be interrupted by unexpected events?

a) 81% - 100%

b) 61% - 80%

c) 41% - 60%

d) 21% - 40%

d) 0% - 20%

9. How much variety is there in the work tasks which you perform?

a) Very much

b) Quite a bit

c) Some

d) Little

e) Very little

10. Every job is confronted by certain routine and repetitive demands. What percent of the activities or work demands connected with you job would you consider to be of a routine nature?

a) 81% - 100%

b) 61% - 80%

c) 41% - 60%

d) 21% - 40%

e) 0% - 20%

Part 3. My thoughts and emotions

1 = Strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly agree

1. I am confident I get the success I deserve in life.

2. Sometimes I feel depressed.

3. When I try, I generally succeed.

4. Sometimes when I fail I feel worthless.

5. I complete tasks successfully.

6. Sometimes, I do not feel in control of my work.

7. Overall, I am satisfied with myself.

8. I am filled with doubts about my competence.

9. I determine what will happen in my life.

10. I do not feel in control of my success in my career.

11. I am capable of coping with most of my problems.

12. There are times when things look pretty bleak and hopeless to me.

Part 4. How I feel in my work group

1 = Strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly agree

In my work…

1. If you make a mistake on this team, it is often held against you.

2. Members of this team are able to bring up problems and tough issues.

3. People on this team sometimes reject others for being different.

4. It is safe to take a risk on this team.

5. It is difficult to ask other members of this team for help.

6. No one on this team would deliberately act in a way that undermines my efforts.

7. Working with members of this team, my unique skills and talents are valued and utilized.

8. My manager often encourages me to take on new tasks or to learn how to do things I have never done before.

9. If I was thinking about leaving this company to pursue a better job elsewhere, I would talk to my manager about it.

10. If I had a problem in this company, I could depend on my manager to be my advocate.

11. Often when I raise a problem with my manager, s/he does not seem very interested in helping me find a solution.

Part 5. Behaviors at work

Section 1

1 = Almost Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost Always

To what extend do you engage in following behaviors at work?

1. Creating new ideas for improvement.

2. Searching out new working methods, techniques, or instruments.

3. Generating original solutions to problems.

4. Mobilizing support for innovative ideas.

5. Acquiring approval for innovative ideas.

6. Making important organizational members enthusiastic for innovative ideas.

7. Transforming innovative ideas into useful applications.

8. Introducing innovative ideas into the work environment in a systematic way.

9. Evaluating utility of innovative ideas.

Section 2

1 = Strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly agree

In my work…

1. I keep focused on the situation to react quickly.

2. I quickly take effective action to solve the problem.

3. I examine available options and their implications to choose the best solution.

4. I easily change plans to deal with the new situation.

5. I stay calm under circumstances where I have to take many decisions at the same time.

6. I seek solutions by talking to more experienced colleagues.

7. My colleagues often ask me for advice in difficult circumstances because I keep cool.

8. I change my way of working as a function of others' feedback and suggestions.

9. I always develop positive relationships with the people I interact with when doing my job because it helps me perform better.

10. I learn new ways of doing my job to better cooperate with colleagues.

11. I try to consider others' viewpoints to better interact with them.

Section 3

1 = Strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly agree

In my work, I…

1. Help others who have heavy workloads.

2. Help others who have been absent.

3. Willingly give of my time to help others who have work related problems.

4. Help orient new people even though it is not required.

5. Consult with my leader or other individuals who might be affected by my actions or decisions.

6. Do not abuse the rights of others.

7. Take steps to prevent problems with other workers.

8. Inform my leader before taking any important actions.

9. Consume a lot of time complaining about trivial matters.

10. Tend to make "mountains out of molehills" (makes problems bigger than they are).

11. Constantly talk about wanting to quit my job.

12. Always focus on what's wrong with my situation, rather than the positive side of it.

13. Am always punctual.

14. Never take long lunches or breaks.

15. Do not take extra breaks.

16. Obey company rules, regulations and procedures even when no one is watching.

17. Keep abreast of changes in the organization.

18. Attend functions that are not required, but that help the company image.

19. Attend and participate in meetings regarding the organization.

20. “Keep up" with developments in the company.

Appendix D

Mplus Scripts

```
Title: Full model - directive;

Data: File = pathdata-dvsnotcentered.dat;

Variable:
Names = dir sup par ach task cse safe dirtask dircse partask parcse
suptask supcse achtask achcse cip ap ocb;

Usevariables = dir task cse safe cip ocb ap dirtask dircse dirtscse tscse;

Missing = all (99);

Define:
tscse = task*cse;
dirtscse = dir*task*cse;
!suptscse = sup*task*cse;
!partscse = par*task*cse;
!achtscse = ach*task*cse;

Analysis:
Bootstrap = 1000;

Model:
safe on dir task cse dirtask dircse dirtscse tscse;

cip ocb ap on safe dir task cse;

MODEL INDIRECT:
cip IND dir;
!cip IND sup;
!cip IND par;
!cip IND ach;

ocb IND dir;
!ocb IND sup;
!ocb IND par;
!ocb IND ach;

ap IND dir;
!ap IND sup;
!ap IND par;
!ap IND ach;

Output:
standardized cinterval(bootstrap);
```

```
Title: Full model - supportive;

Data: File = pathdata-dvsnotcentered.dat;

Variable:
Names = dir sup par ach task cse safe dirtask dircse partask parcse
suptask supcse achtask achcse cip ap ocb;

Usevariables = sup task cse safe cip ocb ap suptask supcse suptscse tscse;

Missing = all (99);

Define:
tscse = task*cse;
!dirtscse = dir*task*cse;
suptscse = sup*task*cse;
!partscse = par*task*cse;
!achtscse = ach*task*cse;

Analysis:
Bootstrap = 1000;

Model:
safe on sup task cse suptask supcse suptscse tscse;

cip ocb ap on safe sup task cse;

MODEL INDIRECT:
!cip IND dir;
cip IND sup;
!cip IND par;
!cip IND ach;

!ocb IND dir;
ocb IND sup;
!ocb IND par;
!ocb IND ach;

!ap IND dir;
ap IND sup;
!ap IND par;
!ap IND ach;

Output:
standardized cinterval(bootstrap);


Title: Full model - participative;
```

```
Data: File = pathdata-dvsnotcentered.dat;

Variable:
Names = dir sup par ach task cse safe dirtask dircse partask
parcse suptask supcse achtask achcse cip ap ocb;

Usevariables = par task cse safe cip ocb ap partask parcse
partscse tscse;

Missing = all (99);

Define:
tscse = task*cse;
!dirtscse = dir*task*cse;
!suptscse = sup*task*cse;
partscse = par*task*cse;
!achtscse = ach*task*cse;

Analysis:
Bootstrap = 1000;

Model:
safe on par task cse partask parcse partscse tscse;

cip ocb ap on safe par task cse;

MODEL INDIRECT:
!cip IND dir;
!cip IND sup;
cip IND par;
!cip IND ach;

!ocb IND dir;
!ocb IND sup;
ocb IND par;
!ocb IND ach;

!ap IND dir;
!ap IND sup;
ap IND par;
!ap IND ach;

Output:
standardized cinterval(bootstrap);


Title: Full model – achievement oriented;

Data: File = pathdata-dvsnotcentered.dat;
```

```
Variable:
Names = dir sup par ach task cse safe dirtask dircse partask parcse
suptask supcse achtask achcse cip ap ocb;

Usevariables = ach task cse safe cip ocb ap achtask achcse achtscse tscse;

Missing = all (99);

Define:
tscse = task*cse;
!dirtscse = dir*task*cse;
!suptscse = sup*task*cse;
!partscse = par*task*cse;
achtscse = ach*task*cse;

Analysis:
Bootstrap = 1000;

Model:
safe on ach task cse achtask achcse achtscse tscse;

cip ocb ap on safe ach task cse;

MODEL INDIRECT:
!cip IND dir;
!cip IND sup;
!cip IND par;
cip IND ach;

!ocb IND dir;
!ocb IND sup;
!ocb IND par;
ocb IND ach;

!ap IND dir;
!ap IND sup;
!ap IND par;
ap IND ach;

Output:
standardized cinterval(bootstrap);
```