

An empirical study examining “Ambidextrous Leadership and Innovative Workplace
Behaviors”

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Executive Summary

So far, researchers have attempted to determine the antecedents associated with Innovative Workplace Behaviors (IWBs). Within the organizational context, this kind of behaviors are initiated to a great extent by leaders. The current study investigates whether Ambidextrous Leadership (AL) is a significant leadership style which fosters IWBs of followers. The underlying conditions of particular follower's personality traits are examined. More specifically, the focus lies on the moderating role of follower's openness to new experiences and conscientiousness. The findings of this study highlight how specific moderators enable the relationship between AL and IWBs. A sample of 103 Greek and Dutch employees from different organizational contexts provided evidence that not all of the relationships between the aforementioned variables were proved to be significant. Hence, AL as a leadership style does not necessarily lead to IWBs of followers. Accordingly, limitations and suggestions for future research are provided for this purpose.

Keywords: innovative workplace behaviors; ambidextrous leadership; follower's openness to new experiences; follower's conscientiousness.

Introduction

The radical transformation of the 21st century business environment is nothing less than a modern industrial revolution, where innovation plays a key role in determining organizational success (Cascio & Aguinis, 2019). Scholars endorse the notion that “innovative work behaviors” aid in attaining success in organizations (e.g. Baumgartner & Rauter, 2017; Rajapathirana & Hui, 2018). The concept of innovative workplace behaviors (IWBs) is defined as an individual behavior that aims to the achievement of initiation and introduction of novel ideas, products, and processes within a working environment (De Jong & Den Hartog, 2008). Innovation can contribute to the growth, performance and survival of a company (Pot, Totterdill & Dhont, 2016). Innovative leaders are change agents who promote the emergence of new ideas in a work environment and aim to establishing a supportive climate for creativity and management of the innovation process (Basadur, 2004).

Leaders’ behavior certainly plays a significant role in influencing these behaviors, as leaders’ behavior acts as a source of influence on the work behavior of employees (Atitumpong & Badir, 2018). The importance of leadership in the process of innovation in organizations is well documented in the literature, as is shown by the meta-analysis conducted by Steele, Watts & Den Hartog (2018). It is the catalyst and the source of creativity and innovation for continuous evolution. However, the studies which identify leadership as one of the most critical aspects behind innovation (i.e. Dhont et al., 2016; Serrat, 2017; Oeij & Vaas, 2016; Wipulanusat et al., 2018) do not pinpoint which behaviors of leadership can lead to the prediction of innovation.

Under the pressure of the need for innovation, the key question for all leaders at all hierarchical levels is what steps they need to take to cope adequately (Kremmer et al., 2019). Creativity is useful as a solution to all problems, while innovation is the real application and execution of creative ideas (Kremmer et al., 2019). Facilitating follower’s innovative behavior might be quite challenging for a leader, as the innovation process is paradoxical in that it consists of activities that are different, and oftentimes conflicting. In particular, the innovation process not only involves creative idea generation, but also implementation of those ideas. Consequently, the management of IWBs can be difficult because certain circumstances may be beneficial for one aspect of the innovation process, but simultaneously detrimental for another aspect (Knight & Harvey, 2015, p. 815).

Rosing et al. (2011) in their review defined a new leadership style, namely Ambidextrous Leadership (AL) that is claimed to be most effective in dealing with the paradoxical requirements of the innovation process. AL utilizes opening and closing leadership behaviors and switches between them when the situation requires so. AL alludes to the flexibility that a modern leader must distinguish between opening and closing behaviors in order to be effective and to deal successfully with paradoxes that innovation process enforces. In the dictionary, ambidextrous is quoted to describe someone who uses both hands equally well (Rosing et al., 2010). That means, a business leader ought to be equally multi-skilled; the one who manages the motley problems in very different conditions in the same effective way, and adapts to the changes (Rosing et al., 2010).

AL's effect on IWBs, the mechanisms facilitating this process and the factors that have an effect on this relationship still need to be explored. Responding to this call, the purpose of the current research is to investigate the relationship between AL and its components on the one hand, and IWBs on the other hand. It also investigates whether the relationship varies according to the follower characteristics, namely followers' openness to new experiences and conscientiousness.

Based on this reasoning, the following hypotheses are formed:

H1: Opening leadership behavior has a positive relationship with IWBs.

H2: Closing leadership behavior has a positive relationship with IWBs.

H3: The interaction between opening and closing behaviors has a positive relationship with IWBs. Specifically, innovative performance is highest when both opening and closing leadership is high.

H4: Followers' openness to new experiences moderates the relationship between opening behaviors and IWBs in such a way that the relationship strengthens (weakens) for the higher (lower) levels.

H5: Followers' conscientiousness moderates the relationship between closing behaviors and IWBs in such a way that the relationship strengthens (weakens) for the higher (lower) levels.

Literature Review

Ambidextrous Leadership

AL is defined as “the ability to foster both explorative and exploitative behaviors in followers by increasing or reducing variance in their behavior and flexibility switching between those behaviors” (Rosing et al., 2011, p. 957). Exploring and exploiting were first used by March (1991) and refer to the type of activities people need to perform during the innovation process. Exploring stems from a constant increase in variability of behaviors resulting in experimentation, taking risks and searching alternatives, while exploiting stems from the reduction of variance of behaviors, adhering to rules, alignments and avoiding risk (Chang & Hughes, 2012). Organizations that are able to balance exploration and exploitation have been found to achieve maximum corporate performance and create decisive innovation (Chang & Hughes, 2012). In the context of organizational management, the concept explains multiple organizational phenomena, including the influence of leadership skills on organizational ambition (Eisenbeiss et al., 2008). Despite numerous studies on organization ambidexterity, the way in which the balance between exploration and exploitation can be achieved, remains relatively unclear (O'Reilly & Tushman 2011).

The central idea of AL is that the interaction of innovation behaviors, must be combined with an equally complex leadership concept (Zacher & Rosing, 2015). The theory suggests that AL predicts followers' explorative and exploitative behaviors with its two opposing, but complementary leadership behaviors: opening and closing behaviors, respectively. AL theory for innovation therefore suggests that the interaction between these two complementary leadership behaviors - opening and closing - predicts individual and group innovation, so that innovation remains at a higher level when both opening and closing leadership behaviors remain high. This means that leaders who acquire the ability to support opening and closing behaviors should apply more successful leadership practices to encourage innovation among their team. In addition, the ambiguous leadership theory argues that the interaction of these complementary leadership behaviors should be more effective on supporting individual and team innovation than a detached leadership style (Zacher & Rosing, 2015).

Leaders with opening behaviors act in such a way that motivate their followers “to search for and experiment with new ideas and alternatives, to think and to do things differently and independently, to take risks and to challenge established routines” (Ceri-Booms, Stouten & Wendt, 2020). The theory of AL argues that,

through opening leadership, follower exploration can grow (Zacher & Rosing, 2015). Moreover, this sets the foundation for leadership endorsement, which leads to openness of followers to leaders' influence (Zacher, Robinson & Rosing, 2016).

In terms of opening behaviors, they focus on encouraging oneself and others, depending on the completion of tasks, the possibilities for independent thinking and initiatives within the group, the open door for discussion and suggestions, and as mentioned, support of the team to act more creatively, providing resources and opportunities (Bonesso et al., 2013).

As a result, the following research hypothesis arises:

H1: Opening leadership behavior has a positive relationship with IWBs.

The complexity of the innovation process lies on the fact that it includes both creativity and the application requirements that come from the organization's procedures. On the one hand, creativity requires employees to think differently, to "break" rules and skip assumptions that have determined their work routine so far, as well as to acquire new knowledge. On the other hand, the application of innovation requires a focus on the usefulness and completion of a product or process in a timely and efficient manner. Employees must be able to act under the pressure of both requirements in order to be successful in terms of innovation performance (Gerlach et al., 2020).

In terms of closing behaviors, it is the observation of plans and instructions, the proof that the corrective measures have been followed, and the quality tools which are taken into account (Bonesso et al., 2013). Closing behaviors, are defined as the behaviors of a leader that "motivate followers to streamline and narrow down their thinking, to coordinate their existing knowledge, to avoid risk-taking, to stick to rules and routines, and to focus on efficiency, goal orientation and execution of their ideas" (Ceri-Booms, Stouten & Wendt, 2020). Again, the theory states that closing behaviors lead to the follower exploitation (Zacher & Rosing, 2015). Still, the theory supports that:

H2: Closing leadership behavior has a positive relationship with IWBs.

In the new challenging business environment, companies become ambidextrous and establish new innovative processes aiming to further evolve themselves, while remaining focused on execution of their existing businesses. This is a demanding procedure, as new activities often involve business models, capabilities, and organizational arrangements that differ from those existing in the organization so far.

Ambidextrous Leadership and Innovative Workplace Behaviors

Becoming ambidextrous is first and foremost a leadership challenge, since leaders need to balance previous and innovative activities, combine both short-term and long-term thinking, and develop emotionally engaging visions while staying focused on business goals (Probst et al., 2011).

The ambidexterity theory of leadership, which considers the obligation of leaders to engage in ambidextrous leadership behavior, i.e. opening and closing behaviors, follows the requirements of innovation due to the fact that they encourage exploration and exploitation behaviors, both in the team and in an individual employee (Zacher & Rosing 2015). This means that in order for employees to be ambidextrous, they must be able to combine exploitation and exploration behaviors in equal amounts. Ambidexterity at an individual level is not only the level at which an organization can balance exploration and exploitation behaviors, but is also a higher level of an organization, where cooperation between exploration and exploitation activities is required. The two interconnected ways of strategic organizational choice, that is, exploration and exploitation, can only be developed when the leadership is not exclusively concerned with the organization as a whole but also with the way the individual employee belongs to that whole (Alghamdi, 2018).

There is often a need for the opening and closing of leadership behaviors to occur simultaneously during organizational work. Closing behaviors, although necessary at the beginning of the process, become less necessary over time. Compliance with the plans remains necessary throughout the process, especially in the testing and validation stage, and also depends on the scale of the projects (Bonesso et al., 2013). In any case, the application of opening and closing behaviors must be adapted to the innovation process so that, along with the innovation, the errors are prevented (Bonesso et al., 2013). Rosing et al. (2011) argue that, creativity alone is not enough to promote innovation, but it is necessary to ensure the implementation of new ideas, dividing innovation in the stages of creativity and implementation. Although both stages appear as parts of the same process, they represent different demands, even opposite behaviors within the leadership. On the one hand, creativity focuses on experimentation, the "out of the box" thinking and goes beyond common beliefs, thus linking the meaning of ambidextrous leadership with exploration. On the other hand, implementation requires a focus on "efficiency, goal orientation and routine execution" (Rosing et al., 2011, p. 965) and can be linked to exploratory activities. So far, the authors of AL assume that due to the complexity of the

innovation process, the separation of the two phases is not possible (Hughes et al., 2018). Previous meta-analyses examining leadership variables, tend to ignore creativity and innovation. As a result, they focus on a limited range and types of leadership, which combine creative and innovative performance into a single variable (Lee et al., 2020).

Leaders engaging to both behaviors, opening and closing, are in-line with the prerequisites required by innovation, since they nurture both explorative and exploiting behaviors in their followers and groups. Furthermore, the interaction of exploration and exploitation behaviors, is assumed to influence employee innovative performance, such that the latter is highest when both opening and closing leadership are high (Tuan, 2017).

The above lead to the following hypothesis:

H3: The interaction between opening and closing behaviors has a positive relationship with IWBs. Specifically, innovative performance is highest when both opening and closing leadership is high.

Accordingly, Rosing et al. (2010) state that both phases of creativity require exploitation, since even creative ideas must be tested by the existing corporate knowledge. In the same way, innovation phases may require new strategies, which should be based on exploratory practices. It is clear that both leaders and followers must constantly switch from exploration to exploitation and vice versa, at every moment of the innovation process (Rosing et al., 2010).

Thus, innovative leaders create ethical models that not only support but also motivate employees. In addition to creating ethical models, senior organizational leaders can influence middle leaders by helping them do the same to the leaders below them. The result is that employees experience feelings of justice, as they witness the practices of which their immediate leaders support them. The promotion of the innovative climate is evident in all levels of the organization, and this way, employees are encouraged to share their ideas on creativity. Leaders, focusing on the lessons learned instead of the mistakes found, draw the maximum from the capabilities of their followers and enhance their trust to their leaders and the organization. In addition, employees realize that their leaders are accessible, open to new ideas and positive in any strategy that proves to be a catalyst for innovation in the workplace (Kremer et al., 2019).

The moderating role of follower personality traits

Personality traits are related to workplace behaviors and attitudes (Bakker et al., 2002; Judge et al., 2002; Kumar & Bakhshi, 2010; Matzler et al., 2011), as well as on IWBs (Yesil & Sozbilir, 2013). McCrae and Costa (1985) developed the Five-Factor Model (FFM), which depicts personality with regards to five factors. Among the Big-Five factors, which namely are agreeableness, neuroticism, extraversion, openness to new experiences and conscientiousness (McCrae & Costa, 1985), the latter two will be addressed in this study, in order to further interpret the relationship between AL and IWBs. These specific personality traits were selected for further investigation as previous research has shown that there is positive relationship between conscientiousness and openness to new experiences on the one hand, and individual innovative behavior on the other hand (Ali, 2019).

Openness to new experiences has been described as consisting of five dimensions, namely active imagination, aesthetic sensitivity, attentiveness to inner feelings, preference for variety, and intellectual curiosity (Costa & McCrae, 1992). Individuals who are open to new experiences are those who appreciate novel ideas and new experiences, are receptive to different points of view and unafraid of dealing with problems using unconventional means (Costa & McCrae, 1992; McCrae & Costa, 1997). Openness to new experiences is associated with traits such as intelligence and curiosity (Bakker et al., 2002). Patterson, Kerrin & Gatto-Roissard (2009) indicate that openness to new experiences is the personality trait that best predicts the propensity for innovation. Yesil & Sozbilir (2013) in their study noted the positive relationship between openness to new experiences and innovation.

Accordingly, the literature suggests that people high in openness to new experiences show more innovative behaviors than those who score low in this factor through developing psychological activation (Madrid et al., 2014). Psychological activation is defined as the “readiness for action or energy expenditure” (Russell, 2003). Hence, feelings associated with activation involve attention to the environment, as well as responsiveness and engagement with it (Frijda, 1986; Thayer, 1996). In addition, high openness is related to passion and impulsiveness, and offers a large variety of ideas and different perspectives (Madrid et al., 2014). People scoring high in the openness factor are more creative and imaginative (McCrae, 1987). On the contrary, low scorers in openness are pragmatic and data driven (Toegel & Barsoux, 2012). Low openness denoted isolated feelings and shallow affective experiences. (McCrae & Costa, 1997).

Furthermore, based on McCrae & Costa (1996; 1997) who indicated that low scorers on openness are hesitant towards novelty and opt for familiar ideas, low openness should not increase innovative behavior and performance because of the lack of positive feelings (Madrid et al., 2014). The above show that the relationship between OB and IWBs is moderated by openness, which lead to our 4th hypothesis:

H4: Followers' openness to new experiences moderates the relationship between opening behaviors and IWBs in such a way that the relationship strengthens (weakens) for the higher (lower) levels.

On the other hand, conscientiousness is understood under the cluster of planned and systematic behaviors, as well as thoroughness and deliberation. Conscientious people have a tendency of being efficient, organized, self-disciplined and act dutifully (Thompson, 2008). Conscientiousness is also related to setting goals and committing to these goals (Barrick et al., 1993). People high in conscientiousness are more persistent, driven, committed and focused (Toegel & Barsoux, 2012), more organized and suitable to demanding jobs and take initiatives more frequently (McCrae & Costa, 1985). On the contrary low scorers on conscientiousness are less ambitious (McCrae & Costa, 1985), flexible, spontaneous, too decisive and flexible (Toegel & Barsoux, 2012).

As stated before, openness to experience is expected to result in high levels of creative behavior. In their review, Hughes et al. (2018) state that openness to new experiences as well as conscientiousness are moderators of the leader behaviors and innovative behavior (Hughes et al., 2018). George and Zhou (2001) argued that openness to experience would result in high levels of creative behavior if feedback valence were positive and job leaders were equipped with a heuristic behavior that allowed employees to be creative. On the other hand, it is found that conscientiousness can significantly predict a team's innovative behavior (Buchanan, 1998).

Accordingly, the following hypothesis is formed:

H5: Followers' conscientiousness moderates the relationship between closing behaviors and IWBs in such a way that the relationship strengthens (weakens) for the higher (lower) levels.

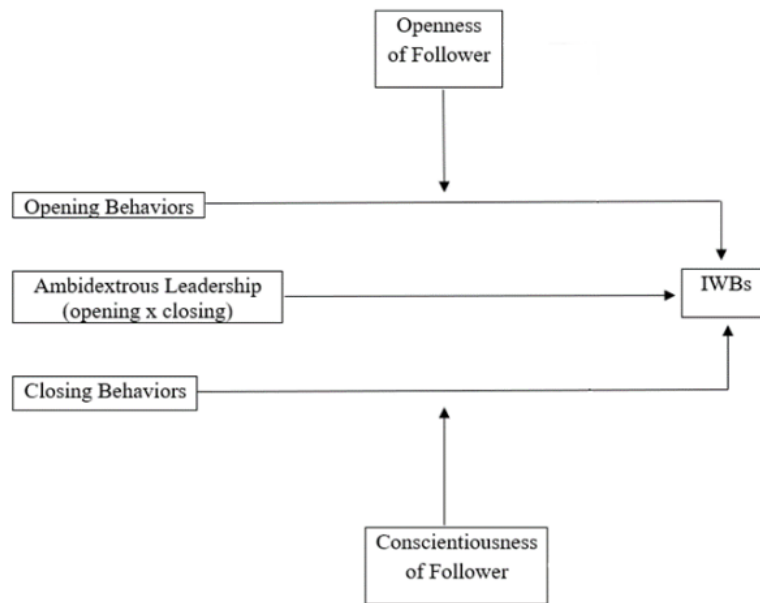


Figure 1. A moderation model

The relationships between opening and closing behaviors and of the following traits will be examined. This will give an opportunity to investigate how each specific follower trait interacts with the different levels of each components of AL in order to facilitate IWBs. As the previous research showed, innovation is highest when both behaviors are high (Zacher & Rosing, 2013; Tuan et al., 2017).

Methodology

Participants and procedure

This quantitative study was conducted to investigate the research model. The research was carried out by collecting data from leader's followers. The sample was distributed among different types of organizations from Greece and the Netherlands. Participants from both countries answered to a version of the survey translated in English. As the participants were employed by large organizations, their level of proficiency in English was considered to be more than adequate to participate in this research. As the sufficient number of leader responses was not obtained, only followers' data were used for the analyses. Participants were approached by a leaflet (Appendix A) which informed them about the research and invited them to participate. An alternative was the organizations in which our internships were held on. In this case, participants were approached in person or via their email addresses.

Measurement of variables/ Scales

The data were collected by a group of researchers who were working on ambidextrous leadership-related studies. The questionnaire was designed to provide evidence for the hypotheses stated earlier in this paper. A seven-point Likert scale was used for the answers.

Ambidextrous leadership (AL). In their research, Rosing et al. (2011) used for each leadership style 7 example behaviors. Despite the fact that these example behaviors were not a scale for AL, a variety of studies used these items to examine AL (ex. Zacher, Robinson & Rosing, 2016). Taking this into account, Ceri-Booms, Stouten & Wendt (2020) developed an AL scale after conducting several interviews. They concluded to 22 items which were maintained in the scale, 12 for opening and 10 for closing behaviors. These were used in the current study, for example: "My manager encourages me to experiment with new ideas", "My manager helps me see the issues from different perspectives", "My manager encourages me to follow rules and guidelines", "My manager encourages me to plan and schedule my work" (Appendix B).

Innovative workplace behaviors (IWBs). Team leaders were asked to rate their followers' IWBs. Additionally, followers also rated their own IWBs, in case that not a sufficient number of leaders were reached. Based on the paper by Hughes et al. (2018), the scale by De Jong et al. (2010) is currently the most reliable scale. This scale gives

an opportunity to the researcher to assess IWBs as a whole concept. However, it also measures different aspects of innovation, which offers the opportunity for running separate analysis for each dimension (i.e. creativity and implementation). Some of the items of the aforementioned scale are the following: “How often does this employee pay attention to issues that are not part of his daily work?”, “How often does this employee wonder how things can be improved?”, “How often does this employee generate original solutions for problems?” (Appendix B).

Follower’s openness to new experiences and follower’s conscientiousness. A shorter form of The Big Five Inventory (BFI) (John and Srivastava, 1999) by Soto & John (2017) was used for measuring both openness to new experiences and conscientiousness of the followers (i.e. I see myself as someone who keeps things neat and tidy, I see myself as someone who is complex, a deep thinker, Appendix B).

Control and demographic variables. The control variables were the gender of the employee and tenure with the leader.

Finally, the research question and hypotheses were tested using PROCESS macro (Hayes, 2016) for SPSS (Statistical Program for Social Sciences). This statistical program helped in computing the regression analyses which contained combinations of moderators. It also offers a simple way in order to analyze complex models using bootstrapping.

Data Analysis/ Results

Cleaning data and normality assumptions

Prior to any analysis, data were tested for extreme values using the Mahalanobis distance. The analysis revealed 3 extreme values which were excluded from the continuation of the analysis. The total sample after this modification was equal to 100 individuals. The analysis through the Kolmogorov-Smirnov test showed that there was a rejection of the null hypothesis for the normality of the data on the opening behaviors ($p < 0.01$), closing behaviors ($p < 0.01$) and follower’s conscientiousness ($p = 0.042$) scale. Due to the large sample size, non-confirmation of normality is not a significant problem in further analysis. Other regression assumptions, such as heteroscedasticity, were tested.

Demographics

The study involved 99 employees from Greece and the Netherlands. 60 (61.2%) of the participants were women and 38 (38.8%) were men. The descriptive information for age, years of service and how long employees have the same manager are given in Table 1. The average age of the sample was 29.7 years ($SD = 5.8$) with the age ranging from 22 to 60 years. The average service life on the sample was 7.9 years ($SD = 6.5$) with a range of 0.5 to 43 years. In addition, it was observed that the employees who participated in the research worked with their current manager / supervisor for 0.96 years ($SD = 0.89$) with a range from 0.1 years to 4 years. Finally, employees worked on average in the current organization for 1.76 years ($SD = 2.07$) with a range from 0.2 to 15 years.

Table 1. Results about age and experience (in years)

	Mean	Standard Deviation	Minimum	Maximum
Age	29.7	5.8	22	60
Total work experience	7.9	6.5	0.5	43
Time working with your current manager/supervisor	0.96	0.89	0.1	4.0
Time working in the current organization	1.76	2.07	0.2	15

Reliability analysis

Data reliability was tested using Cronbach's α reliability coefficient. The results are given in detail in Table 2. The analysis showed high reliability for the IWB scale ($\alpha = 0.907$) and for the opening scale ($\alpha = 0.896$) while good reliability was observed for closing scales ($\alpha = 0.786$) and followers' conscientiousness ($\alpha = 0.784$). The followers' openness to new experiences scale showed low reliability ($\alpha = 0.579$) in its original version. After removing the third item, reliability was marginally acceptable ($\alpha = 0.603$).

Table 2. Reliability analysis results

Scale	Items	Items deleted	Cronbach's α
Closing	10	-	0.786
Opening	12	-	0.896
Followers' openness to new experiences	6	1	0.603
Followers' conscientiousness to new experiences	6	-	0.784
IWB	10	-	0.907

Opening leadership and IWBs

The first hypothesis of the present study was investigated using hierarchical linear regression. More specifically, it was investigated whether opening leaders' behavior has a positive relationship with IWBs using control variables: gender and tenure with the leader. The results are given in Table 3.

The analysis findings showed that none of the control variables were statistically significant in IWBs prediction ($R^2 = 0.026$, $F(2,95) = 1.290$, $p = 0.280$). From the second step of the hierarchical linear regression it was observed that opening leaders' behavior and control variables predict 3.5% of the variability of IWBs ($R^2 = 0.035$, $F(3,95) = 1.135$, $p = 0.339$). Furthermore, opening leaders' behavior does not have a significant relationship with IWBs ($b = 0.113$, $p = 0.364$).

Table 3. Hierarchical regression analysis using IWBs as criterion, opening leaders' behavior as predictor variable and employees' gender and tenure with the leader as control variables

	Unstandardized		Standardized		t	p
	Coefficients		Coefficients			
	B	Std. Error	Beta			
(Constant)	5.048	.407			12.401	.000
Employee gender	-.321	.217	-.155		-1.481	.142
Tenure with leader	.027	.119	.024		.231	.818
(Constant)	4.402	.818			5.382	.000
Employee gender	-.313	.217	-.151		-1.440	.153

Tenure with leader	.030	.119	.026	.249	.804
Opening leaders' behaviour	.113	.124	.092	.911	.364

Closing leadership and IWBs

The second hypothesis of the present study was investigated using hierarchical linear regression. More specifically, it was investigated whether closing leaders' behavior has a positive relationship with IWBs using control variables: gender and tenure with the leader. The results are given in Table 4.

The analysis findings showed that none of the control variables were statistically significant in IWBs prediction ($R^2 = 0.026$, $F(2,95) = 1.290$, $p = 0.280$). From the second step of the hierarchical linear regression it was observed that closing leaders' behavior and control variables predict 3.5% of the variability of IWBs ($R^2 = 0.035$, $F(3,94) = 1.140$, $p = 0.337$). Furthermore, closing leaders' behavior does not have a significant relationship with IWBs ($b = 0.121$, $p = 0.361$).

Table 4. Hierarchical regression analysis using IWBs as criterion, closing leaders' behavior as predictor variable and employees' gender and tenure with the leader as control variables

	Unstandardized		Standardized		t	p
	Coefficients		Coefficients			
	B	Error Std.	Beta			
(Constant)	5.048	.407			12.401	.000
Employee gender	-.321	.217	-.155		-1.481	.142
Tenure with leader	.027	.119	.024		.231	.818
(Constant)	4.417	.798			5.536	.000
Employee gender	-.292	.219	-.141		-1.331	.186
Tenure with leader	.036	.119	.031		.299	.766
Closing	.121	.132	.094		.919	.361

Ambidextrous leadership and IWBs

Table 5 presents the findings of the analysis regarding the third research hypothesis of the present study and whether interaction between opening and closing behaviors has a positive relationship with IWBs using control variables: gender and tenure with the leader. Findings in Table 5 indicated that the moderation role of closing

leaders' behaviour in the relationship between opening leaders' behaviors and IWBs is not significant ($b=0.237$, $p=0.146$)

Table 5. Moderation analysis using IWBs as criterion, opening leaders' behavior as predictor variable and closing leaders' behavior as moderator

	Coefficient	SE	t	p	95% Confidence	
					Interval	
					LL	UL
(Constant)	5.072	0.414	12.251	0.000	4.245	5.895
Employee gender	-0.366	0.225	-1.633	0.106	-0.813	0.079
Tenure with leader	0.003	0.009	0.273	0.786	-0.017	0.022
Opening	0.083	0.129	0.639	0.524	-0.174	0.339
Closing	0.143	0.141	1.014	0.313	-0.137	0.423
Interaction term (Opening x Closing)	0.237	0.162	1.465	0.146	-0.085	0.559

Moderation role of followers' openness to new experiences in the relationship between opening behaviors and IWBs

The fourth hypothesis of the present study was whether followers' openness to new experiences moderates the relationship between opening attitudes and IWBs. The results of the analysis are presented in Table 6 and show that followers' openness to new experiences has a significant effect on the relationship between opening behaviors and IWBs ($b = 1.359$, $p = 0.0014$). The moderation role of followers' openness to new experiences in the relationship between opening behaviors and IWBs is not significant ($b=-0.150$, $p=0.123$)

Table 6. Moderation analysis using IWBs as criterion, opening leaders' behavior as predictor variable and followers' openness to new experiences as moderator

	Coefficient	SE	t	p	95% Confidence	
					Interval	
					LL	UL
(Constant)	-2.934	2.896	-10.13	0.314	-8.682	2.814
Employee gender	-0.105	0.168	-0.623	0.535	-0.438	0.229

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Tenure with leader	0.008	0.005	1.739	0.085	-0.001	0.017
Opening	0.889	0.513	1.732	0.086	-0.129	1.907
Followers' openness to new experiences	1.359	0.544	2.499	0.014	0.280	2.438
Interaction term (Opening leaders' behavior x Followers' openness to new experiences)	-0.150	0.097	-1.556	0.123	-0.342	0.041

Moderation role of followers' conscientiousness to new experiences in the relationship between closing behaviors and IWBs

The fifth hypothesis of the present study was whether followers' conscientiousness moderates the relationship between closing leaders' behaviors and IWBs. The results of the analysis are presented in Table 7 and show the moderation role of followers' conscientiousness to new experiences in the relationship between closing behaviors and IWBs is not significant ($b=0.160$, $p=0.156$)

Table 7. Moderation analysis using IWBs as criterion, closing leaders' behavior as predictor variable and followers' conscientiousness as moderator.

	Coefficient	SE	t	p	95% Confidence Interval	
					LL	UL
(Constant)	4.853	0.433	11.213	0.000	3.993	5.712
Employee gender	-0.242	0.228	-1.061	0.291	-0.695	0.211
Tenure with leader	0.006	0.010	0.536	0.593	-0.015	0.026
Closing	0.222	0.143	1.552	0.124	-0.062	0.506
Followers' conscientiousness	-0.703	0.108	-0.651	0.517	-0.285	0.144
Interaction term (Closing leaders' behavior x Followers' conscientiousness)	0.160	0.112	1.431	0.156	-0.062	0.382

Discussion

Theoretical Implications

Undoubtedly, IWB is needed to boost innovation in organizations in times of globalization and increasing competitiveness (Anderson, De Dreu & Nijstad, 2004). Due to the gaps identified in the research, the aim of this study was to investigate the relationship between AL and IWBs and specific moderators, namely follower's openness to new experiences and follower's conscientiousness, and whether these moderators affect this relationship.

The results have shown that opening and closing leadership behavior as well as the interaction between those has not significant positive (or negative) relationship with IWBs (H₁, H₂, H₃). These findings contrast with those of Ruhnke & Mulder (2016) as well as Hafeez, et al. (2019) and Zacher, et al. (2016) and suggest that leaders who engage in opening and closing behaviors do not influence follower's behaviors.

As regards the follower's openness, it was found a significant relationship between new experiences and IWB (H₄). This finding coincides with the theoretical arguments suggesting a significant correlation between follower's openness and IWB (Madrid et al., 2014; Yesil&Sozbilir, 2013). This result showed that a creative personality can help employees explore new work tools and other new and useful ideas related to product innovation (Amabile, 1996) and also corroborates with Javed et al.'s (2008) findings.

Existing literature, moreover, suggests that individuals with high levels of openness make a significant contribution to innovation (Batey& Furnham, 2006; Harrison, Neff, Schwall, & Zhao, 2006; Nga &Shamuganathan, 2010). Finally, regarding the role of followers' conscientiousness to new experiences in the relationship between opening behaviors and IWBs, the findings suggested not significant relationship (H₅). The finding of the fifth hypothesis is not consistent with Javed et al. (2018)'s as well as Judge et al. (2000)'s findings. This finding possible lies on the fact that employees are pressured by their superiors and possibly by unsupportive colleagues (Watanabe, Tareq, & Kanazawa, 2011). Overall, the results are not consistent with the conceptual model created. In fact, only the hypothesis regarding employees' openness to new experiences was consistent (H₅).

Given that the findings of this study didn't find any significant effect, except for the one between openness to new experiences and IWB, this study increases current understanding regarding followers' openness and IWB (Hafeez, et al. 2019). Moreover,

according to the findings, it is worth noting that despite the non-significant relationship between opening and closing leadership behavior and IWB, there are other prognostic factors that can be used to further promote IWB, such as follower's openness.

Practical Implications

The results of this study suggest do not provide for significant practical implications to improve leader's capabilities and promote IWBs. Both opening and closing leadership behaviors were not significantly affected IWB and hence it is questionable whether employees would engage better when leadership styles are stimulating their exploration behaviors and facilitating their exploitation of ideas. (Alghamdi, 2018).

It is worth noting that employees play an important role in the success of an organization (Nehmeh, 2009). Specifically, employees with high levels of openness tend to be more receptive to new changes and make the necessary sacrifices to meet and overcome organizational outcomes. (Afsar et al., 2014). Given the results regarding the fourth hypothesis, in order to promote IWB, it is crucial employees to have high levels of openness. Several studies have shown that a supportive environment enhance the employees' creation of innovative ideas. On the other hand, organizations that are characterized by a controlling environment decreases employees' effort in generating novel ideas (Deci & Ryan, 1987; Oldham & Cumming, 1996).

Moreover, according to the results of this study, it is fundamental for companies to comprehend what fosters IWB in employees. Additional training is needed for leaders (Poff, 2010; Swailes, 2013) and a systematic training program should be designed to promote as well as cultivate the appropriate leadership skills to support employees' IWB. Instead of just assessing employee's personal traits individually, managers should also seek ways to link openness to new experiences or creativity to high levels of work motivation and desirable work behaviors (Watanabe, Tareq, & Kanazawa, 2011).

It is the responsibility of leaders to promote the IWB of employees for the universal development and well-being of individuals both at company and social level. In conclusion, the study provides more insight into guiding companies to meet the increasingly demanding needs of a changing environment by shedding some more light on the relationships between leadership behaviors and followers' behaviors. Future research is required in order to replicate the current findings and, ultimately strengthen

IWBs of employees. Leaders will then be able to enhance professional development and increase company's viability.

Limitations

This research dealt with a series of limitations that need to be addressed in order to make proposals for future research, in an effort to draw safer and more reliable conclusions. A first level to be observed was that the research sample consisted of 100 employees. This indicates that the research sample was small therefore there are limitations as to the generalization of the results and the representativeness of the sample. For this reason, further empirical data are needed to test whether a larger sample could lead to stronger results.

Moreover, a significant limitation of the study was that IWBs were evaluated with self-reported tools (questionnaires) that record participants' views rather than their actual behavior. Research based on self-reporting tools has the risk of bias in the results (underestimation or overestimation of a situation). Additionally, as the desired number of leaders was not reached, their perspective on their follower's innovative behavior was not included in the analysis, which would provide further insight on the relationship between AL and IWBs. Therefore, future studies should try to collect more objective data.

Recommendations for future research

Based on the above limitations, it is proposed to repeat this research by differentiating the parameters related to the research methodology. More specifically, the increase in the sample and the differentiation of the sampling methodology is a component in which it is significant to give importance in order to achieve the representativeness of the sample. Accordingly, it is suggested that the data should be consisted of leaders' opinions and the opinions of followers with high levels of openness in conjunction with followers' openness in order to get a more precise insight on the relationship between AL and IWBs, as well as the moderators of this relationship.

In the future it is proposed to use additional moderators to the current model in order to control the relationship between ambidextrous leadership and innovative work behavior, such as inherent assignment inspiration (Hafeez, et al., 2019), ethical leadership (Javed et al., 2018), intrinsic task motivation (Ruhnke & Mulder, 2016) and

employee exploration/ exploitation behavior (Rosin and Zacher, 2017; Mom et al.2007). All these moderators are proven to positively affect AL on IWB however there is no evidence regarding all of them. Therefore, such model will enhance the generalization and external validity of the relationship among the constructs. Future studies may also use longitudinal research to shed further light on the underlying causation mechanisms. Additionally, given that this research was conducted between Greece and Dutch, it would be interesting to study in each country separately or among other European countries or even between continents.

Taking into consideration the significance of follower's openness to new experiences in the relationship between opening behaviors and IWBs, it would be beneficial to investigate how openness to new experiences creativity impacts upon customer satisfaction as well as employee performance and customer relationship quality. Such research can enhance the calibration of several contextual factors and hence help the generation of high levels of creativity. Finally, it would be interesting to examine leaders' openness and conscientiousness in relation to follower's satisfaction, in order to improve leader's traits manifestations toward several behavioral approaches.

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Ambidextrous Leadership and Innovative Workplace Behaviors

Zacher, H., Robinson, A. J., & Rosing, K. (2016). Ambidextrous leadership and employees' self-reported innovative performance: The role of exploration and exploitation behaviors. *The Journal of Creative Behavior*, 50(1), 24-46. DOI: 10.1002/jocb.66

APPENDIX A

-Leaflet-

Research on Innovative work behavior

Dear Sir / Madam,

Our research group of master students at Utrecht University, led by dr. S.M. Ceri-Booms, is investigating various factors that might influence innovative work behavior. The target group of this research are employees and their respective supervisors. We are looking for employees and supervisors that are involved in the development of new services/products or constantly have to adapt to new ways of working.

Based on the found results, statements can be made about the ideal conditions for certain leadership styles to initiate innovative work behavior. The present research is unique in its kind and its considerable size. Some of the different factors that will be investigated are:

- Ambidextrous leadership
- Psychological empowerment
- Intrinsic and extrinsic motivation

What does this mean for you?

- The questionnaire for the employee will take up 5-10 minutes to complete
- The supervisor will fill in a different questionnaire which takes up to 5 minutes to complete
- The results will be shared with the company if you would like that
- The data will be anonymous and will be treated confidentially and the questionnaire is digitally available

Please let us know if you would like to contribute to our research

APPENDIX B

-Scales-

Innovative Workplace Behaviors items

by De Jong, J., & Den Hartog, D. (2010).

How often does this employee:

1. pay attention to issues that are not of his daily work?
2. wonder how things can be improved?
3. search out new working methods, techniques or instruments?
4. generate original solutions for problems?
5. find new approaches to execute tasks?
6. make important organizational members enthusiastic for innovative ideas?
7. attempt to convince people to support an innovative idea?
8. systematically introduce innovative ideas into work practices?
9. contribute to the implementation of new ideas?
10. put effort in the development of new things?

Ambidextrous Leadership items

by Ceri-Booms, M., Stouten, J. & Wendt, H. (2020).

Note: All the items of AL can be obtained by Dr. Meltem Ceri-Booms (via s.m.ceri-booms@uu.nl).

Follower openness to new experiences items

by Soto, C. J., & John, O. P. (2017).

I see myself as someone who:

1. is fascinated by art, music, or literature.
2. has few artistic interests. (rev)
3. is complex, a deep thinker. (rev)
4. has little interest in abstract ideas.
5. is original and comes up with new ideas.
6. has little creativity. (rev)

Follower conscientiousness items

by Soto, C. J., & John, O. P. (2017).

I see myself as someone who:

1. keeps things neat and tidy.
2. tends to be disorganized. (rev)
3. is persistent, works until the task is finished.
4. has difficulty getting started on tasks. (rev)
5. is reliable, can always be counted on.
6. can be somewhat careless. (rev)