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Innovational Leadership: A new construct and validation of a scale to measure it

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Abstract

Due to the current highly competitive business environment, companies need committed employees with innovative behaviors who contribute to innovation in the company. In this regard, we propose the construct Innovational Leadership, a specific style of leadership that promotes such manners. Likewise, we present the process of construction and validation of the Innovational Leadership Scale (ILS-16) through three sequential studies analyzing psychometric properties. These studies were conducted with different samples for a total of 367 employees. The results demonstrated that the ILS-16 is a valid and reliable unidimensional scale for assessing the proposed construct. This study involves scholars who will have the possibility to build new models, and also managers because ILS-16 constitutes a practical tool to measure innovational leadership in their companies.

Keywords: Innovational leadership; individual innovation; leadership; innovative work behavior; test constructions; test validation.

Estilo de Liderazgo para la Innovación: Presentación de un nuevo constructo y validación de una escala para medirlo

Resumen

Dado el entorno empresarial actual, altamente competitivo, las empresas necesitan empleados comprometidos, que tengan comportamientos innovadores y que contribuyan a la innovación de la organización. En este sentido, proponemos el constructo Liderazgo para la Innovación, un estilo específico de liderazgo que promueve comportamientos innovadores en los empleados. Asimismo, presentamos el proceso de construcción y validación de la Escala de Liderazgo para la Innovación (ILS-16, por su sigla en inglés), a través de tres estudios secuenciales, analizando sus propiedades psicométricas. Los estudios se realizaron con diferentes muestras, para un total de 367 empleados. Los resultados demostraron que la ILS-16 es una escala unidimensional válida y confiable para evaluar el constructo propuesto. Este estudio tiene implicaciones para los académicos que tendrán la posibilidad de construir nuevos modelos y para los gerentes, en tanto que la ILS-16 constituye una herramienta práctica para medir el liderazgo para la innovación en sus organizaciones.

Palabras clave: liderazgo para la innovación; innovación individual; liderazgo; comportamiento innovador en el trabajo; construcción de escalas; validación de escalas.

Estilo de Liderança para Inovação: apresentação de um novo construto e validação de uma escala para medi-lo

Resumo

Dado o ambiente de negócios altamente competitivo de hoje, as empresas precisam de colaboradores comprometidos, com comportamentos inovadores e que contribuam para a inovação da organização. Nesse sentido, propomos o construto "Liderança para a Inovação", um estilo específico de liderança que promove comportamentos inovadores nos colaboradores. Da mesma forma, apresentamos o processo de construção e validação da Escala de Liderança em Inovação (ILS-16, Innovation Leadership Scale), por meio de três estudos sequenciais, analisando suas propriedades psicométricas. Os estudos foram realizados com diferentes amostras, totalizando 367 funcionários. Os resultados demonstraram que a ILS-16 é uma escala unidimensional válida e confiável para avaliar o construto proposto. Este estudo tem implicações para acadêmicos que terão a oportunidade de construir novos modelos e para gestores, pois o ILS-16 é uma ferramenta prática para medir a liderança da inovação em suas organizações.

Palavras-chave: liderança para a inovação; inovação individual; Liderança; comportamento inovador no trabalho; construção de escalas; validação de escala.

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1. Introduction

Companies face a highly complex and uncertain environment nowadays, they should transform themselves continuously to successfully adapt to these changing circumstances without losing their stability. In this context, innovation is a key factor that helps companies survive and thrive, and employees play a crucial role in this innovation. They create and implement innovative solutions in their organization, thus enhancing its innovation capacity (Purc & Laguna, 2019). Those who think differently and propose innovative and productive changes in their work environment are essential under such conditions. In fact, they are considered critical for companies' survival and success in the current times, since they allow the company to adapt to a changing business environment and help it build and maintain a competitive advantage (AlEssa & Durugbo, 2021; Choi et al., 2016; De Spiegelaere et al., 2014). Therefore, employees should be able to create synergies with others to propose useful ideas or transformations by sharing knowledge and enhancing their learning capacities. This study introduces the term innovational leadership, a kind of leadership that encourages innovative work behavior (IWB) individually in their employees.

Thus, developing and maintaining employee innovative behaviors is currently the most important and relevant challenge for companies to successfully cope with a complex business environment in which global market forces are highly competitive (Kim & Lee, 2013; Wang et al., 2018). However, despite its importance, the knowledge about organizational and individual factors underlying this behavior is still limited (Shafie et al., 2014). In this regard, a recent review conducted by AlEssa and Durugbo (2021) highlights the need to address the issue of leadership in future research, and suggests to study leadership styles that influence IWB in different industries and countries.

Although it is well known that leadership is an important driver of employees' IWB, results are not conclusive and there is an important gap in this regard that should be addressed by studying the type of leadership that encourages it in the organizations (Sudibjo & Prameswari, 2021). This study presents a new construct named "Innovational Leadership", that contributes to fill this gap. In addition, we offer a valid questionnaire to measure it, which has practical implications because it can be applied in companies with other organizational and individual variables, allowing them to design more effective interventions to enhance innovative behaviors based on leadership practices.

This study is presented as follows: first, we present a theoretical framework to support the new construct proposed. Then, we analyze and discuss some terms related to innovational leadership by delimiting the proposed construct. Subsequently, the background to develop the construct and the scale's building process is

presented through three sequential studies: In study 1, we present the item generation and initial version of the Innovational Leadership Scale (ILS), including statistical analysis to estimate the dimensionality and reliability of the scale; In study 2, we present an adjusted model and examine the criterion-related validity; In study 3, the psychometric properties of the final version of the scale are presented. This analysis includes dimensionality, convergent validity, and reliability. Finally, the discussion and conclusions are presented.

2. Theoretical Framework

2.1 Leadership and organizational innovation

Broadly speaking, leadership styles directly or indirectly affect organizational innovation. Leaders influence organizational climate, organizational learning, knowledge sharing, and employees' innovative behavior (Alblooshi et al., 2020). They also influence organizational practices that shape an environment which supports and promotes the innovation process (Jia et al., 2018). Studies have extensively focused on the relationship between leadership styles and organizational innovation. A systematic literature review by Alblooshi et al. (2020) showed leadership styles that directly affect organizational innovation, such as entrepreneurial, strategic, and integrative leadership. Other styles that indirectly affect organizational innovation are authentic, ethical, altruistic, and spiritual leadership. Some others such as transformational and transactional leadership affect organizational innovation both directly and indirectly. According to the cited literature review, transformational leadership affects innovation indirectly by enhancing an organizational climate for innovation and directly by promoting followers' innovative work behaviors. However, to a lesser extent, transactional leadership, a style based on benefit and goals, also has a significant impact on organizational innovation, mainly through exploitative innovation activities. Similarly, Miller and Miller (2020) highlighted the fact that leaders should be oriented toward more transformational rather than transactional tasks to encourage innovative behaviors. In any case, despite the lack of conclusive results about the specific leadership style that encourages IWB, it can be asserted that leadership is one of the main factors to encourage innovation in companies (Sethibe & Steyn, 2017).

Based on those two leadership styles, we built the initial models of Innovational Leadership Style. They were selected because they affect innovation directly and indirectly by creating an organizational environment appropriate for it. This work environment includes an organizational climate broadly understood as a sociological context, where formal and informal interpersonal relationships occur. The employees feel

free to interact openly, and confident and safe to share their ideas and to propose changes (Alblooshi et al., 2020). Thus, innovational leadership can be understood as a style of leadership that encourages innovative behaviors in the employees.

2.2 Leadership and innovation: Related notions

The literature review shows that leadership and innovation have been linked from various perspectives. In this framework, we found two different ones: innovative leadership and innovation leadership. Innovative leadership is defined as the process of making relevant changes to solve problems and benefit people (Şen & Eren, 2012). Thus, organizational innovation requires a leadership that encourages organizational learning, enables employees' participation in the decision-making process, promotes team collaboration, provides support and resources to innovate, and creates an organizational climate for innovation where change and risk are accepted. From this perspective, leaders are oriented to innovation in their companies, and they should transform ideas into tangible assets (Alblooshi et al., 2020). Accordingly, these authors asserted that "Innovative leaders know the past, see the present and predict the future, and establish a vision for changing and creating new political, social, economic, and technological conditions for solving the present and anticipated future problems and satisfying the needs of people in organizations and nations" (p.5). Thus, innovative leader are strategists who share a vision that inspires followers to work toward goals, encourages collective thinking, and focuses on stakeholders' needs and their feedback. Accordingly, the leaders are those who know when there is a need to be innovative (Sultana & Rahman, 2012). Innovative leaders inspire and have a clear strategic vision, strong focus on the customer, and the ability to create an organizational climate of trust through concrete actions (Mamula et al., 2019). In general, the concept of innovative leadership is linked to performance and successful organizational change (Whitney & Schau 1998) through vision, competencies, and management of organizational innovation by developing an innovative culture in their companies and giving a strategic direction to do it (Goals, principles, and policies) (Sultana & Rahman, 2012). Innovative leadership is related to the strategy and innovation culture (Agin & Gibson, 2010).

Alternatively, the term "innovation leadership" refers to leaders who can create strategy, build relationships, and bring commitment to implement something new that adds value to their organization. Thus, the main role of those leaders is to influence creativity and innovation by promoting, sponsoring, and leading the innovation processes with its components strategically (Alsolami et al., 2016; Ailin & Lindgren, 2008; Deschamps, 2003; Samad & Abdullah, 2012). Therefore, innovation leaders

should have the competences to motivate employees to change and propose creative ideas, be a strategist, and build capacities in the organization to accomplish their innovative goals (Vlok, 2012). At an individual level, innovation leadership involves leaders' behaviors that stimulate employees' initiative, assign responsibilities, provide performance feedback, and maintain a trusting relationship with them to contribute to organizational innovation (Carmeli et al., 2010).

3. Innovational Leadership: Conceptual Delimitation

Alternatively, this study proposes innovational leadership, which refers to a style of leadership that encourages individual innovation and innovative behaviors in their employees. Innovative work behavior is defined as an employee's intentional action addressed to generating, applying, and implementing new ideas, products, or processes. These behaviors can be demonstrated from different job positions within a role, group, or organization (Farr & Ford, 1990; Janssen, 2000; De Spiegelaele et al., 2014). Thus, innovational leadership is centered on employees' innovative outcomes and is defined as a set of practices and skills that leaders develop to promote innovative behaviors in their workers at the individual and collective level.

3.1 Research background: Building the notion of innovational leadership

Considering that IWB was the criterion variable, this study proposed and tested an exploratory model of leadership that included some individual and organizational variables that, according to the literature review, have shown some relationship to this behavior. These variables were organizational absorptive capacity, organizational climate for innovation, and employee work engagement. In this model, the concepts of transformational and transactional leadership were used as a base due to their theoretical and empirical robustness.

Three studies were conducted to support the proposed model. The first study included a sample of 267 Colombian employees. The results showed that both leadership styles influence employees' innovative behavior, direct and mediated by organizational climate, for innovation and organizational absorptive capacity. Employees' work engagement showed a direct effect in the relationship between leadership and IWB instead of a moderation role (Contreras et al., 2017).

Later, this model was tested on 1429 employees from seven Latin American countries (Contreras et al., 2020). The objective of the second study was twofold: (1) to observe whether the found relationships remain in other cultures that keep similarities, and (2) to have deeper knowledge about how leadership boosts the employees' innovative behavior. The results showed

that leadership by itself is not enough to promote IWB in the employees. The effect of transformational and transactional leadership on IWB is mediated by absorptive capacity and work engagement, respectively. Similarly, organizational absorptive capacity and employee work engagement demonstrated direct effects on IWB. Interestingly, the organizational climate for innovation showed a moderating effect on the entire model. Despite the cultural differences between Latin American countries, the proposed model demonstrated its validity for the region. Consequently, it can be concluded that leadership practices are needed to encourage employees' innovative behavior; however, other variables are needed to ensure this effect.

Finally, a third study using this model was conducted in Africa to explore how the culture could affect the relationships proposed and tested in Latin American samples. [Atorba \(2019\)](#) replicated the model in a sample of 284 employees from Ghana. The results are similar to those of previous studies. Transformational and transactional leadership demonstrated their influence on IWB. Furthermore, employee work engagement and organizational absorptive capacity demonstrated their mediating role and organizational climate for innovation played a moderating role, but only for the relationship between transformational leadership and IWB, not for transactional leadership.

Based on the previous findings, this study draws the characteristics that comprise the Innovational Leadership Style, understood as a set of practices and skills that leaders develop to promote innovative behaviors in their workers at the individual and collective level. Based on a literature review, a set of characteristics that underline the study findings is proposed to provide an integral approach to such leadership. These characteristics were used to support the development of the initial pool of items ([Table 1](#)).

Table 1. Variables revealed by our previous studies to configure the Innovational Leadership Style

Characteristics	Related to
Encourage safe environment for change	Organizational climate for innovation
Promotes learning processes	Absorptive capacity
Strategic thinking	Transformational and Transactional Leadership
Trustable and Fair	Transformational Leadership
Oriented to people	Transformational Leadership
Provides support	Transformational Leadership
Recognize and reward performance	Transactional Leadership
Monitoring and adjustment	Transactional Leadership
Stimulate a sense of belonging and gratification	Work Engagement

Source: own elaboration.

4. Building the Innovational Leadership Scale (ILS)

On the identification of variables that underlined the earlier findings, three studies were conducted to develop the ILS and accumulate evidence on the validity of the measure. This section presents the procedure and the sample used in each study. Acceptance of data processing was obtained from the participants of the three studies before completing the online questionnaires. Anonymity and confidentiality of the information were guaranteed. The inclusion criterion in the three studies was full-time employment for at least six months in their company.

4.1 Study 1: Scale development

4.1.1 Item generation

The questionnaire items are constructed based in the previously tested models. The characteristics representing the study findings are then identified. A pool of items was generated after the exclusion of 74 items based on judges' revision. They were distributed as follows: Encourage safe environment for change (10 items), promote learning processes (13 items), strategic thinking (7 items), reliable and fair (10 items), people-oriented (10 items), provide support (6 items), recognize and reward performance (4 items), monitor and adjustment (10 items), and stimulate a sense of belonging and gratification (4 items).

4.1.2 Dimensionality and reliability of the first version of ILS

In this phase, the dimensionality of the construct was evaluated with exploratory factor analysis procedure in a sample of 83 employees. The study results showed two factorial solutions: one consisting of 15 items grouped into four factors (ILS-15) and the other consisting 16 items (ILS-16) grouped into a single component ([Tables 2 and 3](#)).

4.1.3 Research sample for study 1

The sample consisted of 83 employees (27.7% male, 72.3% female). Most respondents were between 18 and 29 years of age (60.2% of the whole sample), 30 and 39 (31.3%), and the rest were over 40 (8.4%). In terms of tenure, 28.9% of the sample reported being employed at the organization for less than one year, 61.4% reported being employed for one to five years, and 9.6% reported more than five years of employment. Furthermore, respondents were at managerial (56.6%) and non-managerial (43.4%) levels. Finally, 42.2% of the participants were employed in SMEs, while 57.8% worked in big companies.

Table 2. Exploratory factor analysis of ILS-15. Rotated Component Matrix^a

My Boss...	Factor Load
Factor 1 (Cronbach's alpha = 0.87)	
delegates tasks and responsibilities correctly, taking into account the capabilities of people	0.70
has the ability to make people work harmoniously	0.68
takes into account the opinion of employees to make decisions	0.78
prefers to make decisions by involving everyone	0.77
Factor 2 (Cronbach's alpha = 0.86)	
does a fair distribution of duties	0.70
encourages change although it implies taking risks	0.83
encourages employees to be part of the organization through its principles	0.74
acknowledges and rewards exceptional results	0.76
Factor 3 (Cronbach's alpha = 0.86)	
urges me to overcome the situation when things do not go well	0.52
gives me precise and accurate information	0.80
is clear in what he/she wants to communicate	0.77
encourages that employees engage in the processes in a critical way	0.71
Factor 4 (Cronbach's alpha = 0.79)	
knows very well how things work in our corporate sector	0.74
is capable of identifying opportunities and prepares to exploit them	0.75
quickly identifies opportunities as soon as they appear	0.81
Note. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. ^a . Rotation converged in six iterations with four components with eigenvalue > 1 Kaiser Mayer Olkin (KMO) = 0.89 Bartlett's Test of Sphericity Approx. Chi-Square = 780.71 df = 105 Sig. = 0.00	

Source: own elaboration.

Table 3. Exploratory factor analysis of ILS-16. Component matrix.

My Boss...	(Cronbach's alpha = 0.96)	Factor Load
urges me to overcome the situation when things do not go well		0.70
knows what is happening in the environment so that the organization is prepared for changes		0.70
delegates tasks and responsibilities correctly, taking into account the capabilities of people		0.72
seeks ways to overcome difficult situations		0.88
challenges work teams with the purpose to generate changes		0.74
takes into account the opinion of employees to make decisions		0.78
is clear in what he/she wants to communicate		0.74
helps us to solve conflicts effectively		0.85
knows how to take advantage of daily conflicts for the benefit of the organization		0.80
likes that we think in a critical way		0.76
accepts opinions different from his/her own when they are well argued		0.84
acts in such way that it generates well-being among his/her employees		0.86
acknowledges the balance between work and family		0.79
encourages different teams to work together in a coordinated manner		0.79
supports employees who propose changes although it implies taking risks		0.78
values people for what they are		0.90
Note Extraction Method: Principal Component Analysis. Rotation Method: none due to 1 component extracted. KMO = 0.94 Bartlett's Test of Sphericity Approx. Chi-Square = 981.39 df = 120 Sig. = 0.00		

Source: own elaboration.

4.2 Study 2: Selected model and Criterion-related validity of the ILS

The second study obtained additional empirical evidence to confirm the dimensionality of the two obtained versions of ILS and select the one that maintains the former structure. The criterion-related validity was tested in the selected scale by examining the relationship between the ILS and outcome variable: IWB. It was measured using the scale designed by Janssen (2000), which assessed individual innovative behavior in the workplace through nine items to be responded on a seven-point scale. The questionnaire assessed the IWB understood as the generation, promotion, and implementation of ideas by the employees. The scale had demonstrated high reliability (Cronbach's alpha = 0.95). Although the IWB scale has three factors, it could be considered a one-dimensional scale because its subscales are strongly intercorrelated. Indeed, this construct is best understood in a combined form as an overall score (Janssen, 2000; Scott & Bruce, 1994).

4.2.1 New evidence of ILS dimensionality

A confirmatory analysis was conducted. According to the results, the structure of the previous four factors in

the ILS-15 was not replicated in the second study and instead a bi-factorial structure was found with no clear groupings of the items: 7 out of the 15 items had factorial loads higher than 0.40 in both factors. Alternatively, Study 2 proves the one-dimensionality of the ILS-16 because in a sample other than that used in the first study, the structure of a single component emerged for the second time (Table 4), while the multidimensional structure of ILS-15 was not maintained. Consequently, the ILS-15 form is discarded for estimating the proposed construct.

Analysis of the ILS-16 items shows that four of the nine variables were represented: (1) Promote learning processes; (2) Encourage safe environment for change; (3) monitor and adjust; and (4) oriented to people (Table 4). To confirm the one-dimensionality of the ILS-16, the internal consistency was estimated based on Cronbach's alpha, which was 0.96. Thus, the reliability of the ILS-16 to measure the construct Innovational Leadership Style was demonstrated. Overall, innovational leadership, evaluated by ILS-16, is a style characterized by the promotion of the learning process among employees in companies; the creation of a safe environment for the employees to propose changes, where they have the opportunity to participate; for being people-oriented and led by monitoring and adjustment.

Table 4. Exploratory factor analysis of ILS-16. Component Matrix.

Innovational Leadership Features	My Boss...	Factor Load
Promotes learning processes	knows what is happening in the environment so that the organization is prepared for changes	0.70
	encourages different teams to work together in a coordinated manner	0.73
	delegates tasks and responsibilities correctly taking into account the capabilities of people	0.71
	guides the employees to make their own decisions	0.82
Encourage safe environment for change	challenges work teams with the purpose to generate changes	0.73
	likes that we think in a critical way	0.82
	accepts opinions different from his/her own when they are well argued	0.74
	supports employees who propose changes although it implies taking risks	0.77
Monitoring and adjustment	is clear in what he/she wants to communicate	0.77
	helps us to solve conflicts effectively	0.86
	knows how to take advantage of common problems for the benefit of the organization	0.79
	seeks ways to overcome difficult situations	0.81
Oriented to people	acts in such way that it generates well-being among his/her employees	0.85
	acknowledges my work-life balance	0.80
	appreciates people for who they are	0.80
	urges me to overcome the situation when work-related issues do not go well.	0.82
Note (Cronbach's alpha = 0.96) Extraction Method: Principal Component Analysis. Rotation Method: none due to 1 component extracted. KMO = 0.92 Bartlett's Test of Sphericity Approx. Chi-Square = 723.70 df = 120 Sig. = 0.00		

Source: own elaboration.

4.2.2 Criterion-related validity of the ILS-16

The second objective of Study 2 was to estimate the correlation of scores of ILS-16 with an independent external measure as an outcome variable. Based on the literature, this study identified that the IWB scale constitutes an adequate criterion for the proposed estimation. The results indicated a correlation between both the measures ($r_{xy} = 0.39$ sig. 0.002), which confirms the positive relationship between the constructs. As expected, we found a moderate level of correlation among measures of different constructs; namely, the results of the criterion validity prove that ILS-16 measures an emerging construct called Innovational Leadership Style. Similarly, it is assumed that this leadership style promotes innovative behaviors in the employees.

4.2.3 Research sample for study 2.

In this study, the following two samples are used:

ILS-15 sample: The sample consisted of 145 employees (42.8% male, 57.2% female). Most respondents were between 30 and 39 years of age (53.1% of the whole sample), over 40 (32.4%), the rest were between 18 and 29 (13.1%). About the tenure, 4.8% were employed for less than a year, 39.3% for 1–5 years, and 55.9% for more than 5 years. Furthermore, respondents were at managerial (29.7%) and non-managerial (70.3%) positions. Finally, all participants were employed by large companies.

ILS-16 sample: The sample consisted of 63 employees (41.3% male, 58.7% female). Most respondents were between 18 and 29 years of age (58.7% of the whole sample), between 30 and 39 (36.5%), and the rest were over 40 (4.8%). About the tenure, 37.1% were employed for less than a year, 57.1% for 1–5 years, and 6.4% for more than 5 years. Furthermore, respondents were at managerial (51.1%) and non-managerial (42.9%) positions. Finally, 36.5% of the participants worked at SME companies, while 63.5% were employed by large companies.

4.3 Study 3: Final version of ILS-16

The objective of Study 3 was to add more evidence on the psychometric properties of the ILS-16. First, additional evidence of the dimensionality and criterion-related validity was collected. Additionally, the convergent validity of the scale was demonstrated by examining transformational leadership using the scale proposed by Rafferty and Griffin (2004). Finally, the reliability of this final version was proven.

4.3.1 Psychometric properties.

The third application of the scale provides new empirical evidence that confirms the one-dimensionality of the ILS-16 (Appendix). This scale comprises different

behaviors that conform to a construct called Innovational Leadership Style. The reliability of the ILS-16 was tested with a Cronbach's alpha value of 0.95. Regarding the criterion-related validity, this study uses the transformational leadership scale proposed by Rafferty and Griffin (2004), which has shown high reliability (Cronbach's alpha=0.96). Although these authors propose a 15-item scale with five separate factors to assess transformational leadership, a total score of the scale can be used to measure this style as a whole (Van Dierendonck et al., 2014). This approach is consistent with that of Judge and Bono (2000), who argued that the differentiation between leadership dimensions is not useful because of the high inter-factor correlations (Judge & Bono, 2000; Bono and Judge, 2003). Indeed, empirical studies suggest that the dimensions of transformational leadership are highly correlated with each other (Rafferty & Griffin, 2004). According to the results, ILS-16 appeared to be a better predictor of IWB than transformational leadership (Table 5).

According to the results, the correlation between ILS-16 and transformational leadership is highly significant, which demonstrated the convergent validity of the two scales since both measure the construct of leadership, and the instruments correlated positively and significantly with IWB. However, the correlation between ILS-16 and IWB was higher, which demonstrates a greater specificity of the *Innovational Leadership Style* with regard to the IWB. Moreover, following the procedures of Eid et al. (2017), the difference between the correlations ILS-16 with IWB ($r_{12} = 0.54$) and transformational leadership scale with IWB ($r_{13} = 0.43$) was estimated and a comparison was made in the same sample, showing a significant difference ($z = 2.135$ sig. 0.016).

4.3.2 Research sample for study 3

The sample consisted of 76 employees (32.9% male, 67.1% female). Most respondents were between 18 and 29 years of age (46.1% of the whole sample), between 30 and 39 (40.8%), the rest were over 40 (13.2%). With regard to tenure, 27.6% of the sample was employed for less than a year, 51.3% for 1–5 years, and 21.9% for more than 5 years. Furthermore, respondents were at managerial (34.2%) and non-managerial (65.8%) positions. The 25% of the participants worked at SME companies while 75% worked in large companies.

Table 5. Zero-order correlations between the study variables.

Scale	Mean	SD	1	2	3
1. Innovative Work Behavior	3.37	0.82	[0.93]		
2. Innovational Leadership	3.47	0.88	0.54**	[0.95]	
3. Transformational Leadership	3.52	0.87	0.43**	0.87**	[0.94]

Note: Cronbach's alpha in the diagonal. ** $p < .01$.

Source: own elaboration.

5. Discussion and conclusions

Companies today should transform permanently to maintain their competitiveness and growth in a highly complex work environment. This process involves the active participation of employees who, due to their different positions, produce changes through innovative behaviors. Several studies found that leadership styles encourage this behavior in employees. However, the influence of leadership on employees' IWB involves other variables that should be considered, which in turn are shaped by leadership. In this framework, this study proposes a new construct of leadership called Innovational Leadership Style, which is based on earlier studies and our own research background about this topic.

This study contributes to expand the knowledge about the effect of leadership and innovative work behaviors, which are necessary, as suggested by AlEssa and Durugbo (2021). Likewise, by proposing a new model of leadership that promotes innovative behaviors, and due to the inclusion of different styles of leadership, this research contributes to reduce the knowledge gap observed in the literature. Up to date, the results of thesis studies are not conclusive (Sudibjo & Prameswari, 2021).

Therefore, this study offers an integral approach to leadership, which includes other relevant variables to encourage employees' innovative behaviors. Based on this perspective, this study proposes a scale to measure this style of leadership, called Innovational Leadership Scale (ILS-16). It introduces the process of construction and validation. According to the results, the ILS-16 demonstrated its one-dimensionality despite involving characteristics from different variables. These characteristics were identified based on the earlier findings. Similarly, the ILS-16 shows a higher correlation to IWB than traditional transformational leadership. Overall, the ILS-16 demonstrated its validity and reliability to assess Innovational Leadership Style.

This research highlights the importance of encouraging innovation in the companies through employees' innovative behaviors as was suggested by Purc and Laguna (2019). The relevance of developing a construct about a style of leadership to enhance innovative behaviors and build a scale for its measurement is something that should be closely considered as is suggested by AlEssa and Durugbo (2021). This tool acquires relevance considering that innovative employees are crucial for companies to remain and acquire competitive advantages (AlEssa & Durugbo, 2021; Choi et al., 2016). In addition, the proposed construct from the leadership approach could contribute to enhancing the innovative behaviors, considering that leadership is one of the most important associated factors (Sethibe, & Steyn, 2017).

The implications of this newly proposed leadership style are threefold. From a conceptual point of view, this study enhances the literature regarding leadership and innovation through employees' behavior. From the research perspective, it provides a reliable and valid new scale to assess the Innovational Leadership Style. This scale can be used in relation to other organizational and individual variables to understand the effect of leadership on innovation processes in companies. Finally, the practical implications for managers can be oriented to examine their own leadership through employees' perceptions and to improve their leadership practices to encourage employees' innovative behavior, therefore, their innovation capacity. Currently this capacity is considered one of the most important organizational features that allow companies to remain and thrive in the highly complex business environment (Wang et al., 2018).

The results of this study contribute to both scholars and managers. In the first case, this scale offers scholars the possibility to measure the innovational leadership and build models that allow them to identify related variables with this construct, widening the knowledge in this field. In the second case, this scale is useful for managers insofar as ILS-16 constitutes a practical tool to measure innovational leadership in their supervisors or directors, which leads to conduct effective training interventions that enhance this style of leadership from human resources departments.

Finally, it is important to develop further studies to consolidate this new style of leadership and obtain additional evidence to support the psychometric properties of the presented scale. Therefore, ILS-16 can be used by academicians when the Innovational Leadership Style needs to be measured (Appendix).

Conflict of interest

The authors declare no conflict of interest.

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Appendix

Innovational Leadership Scale (ILS-16)

Please fill in according to your perception at the workplace: *How often does your boss display the following behaviors?*
In case you have more than one boss, please choose the one with whom you work most directly.

MY BOSS:	Never	Hardly Ever	Sometimes	Almost Always	Always
1. urges me to overcome the situation when work-related issues do not go well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. knows what is happening in the environment so that the organization is prepared for changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. delegates tasks and responsibilities correctly, taking into account the capabilities of people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. seeks ways to overcome difficult situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. challenges work teams with the purpose to generate changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. guides the employees to make their own decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. is clear in what he/she wants to communicate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. helps us to solve conflicts effectively	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. knows how to take advantage of common problems for the benefit of the organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. likes that we think in a critical way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. accepts different opinions to his/her own when they are well argued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. acts in such way that it generates well-being among his/her employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. acknowledges my work-life balance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. encourages different teams to work together in a coordinated manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. supports employees who propose changes although that may imply taking risks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. appreciates people for who they are	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>