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## The Impact of E-Leadership Effectiveness on Turnover Intentions of Remote Employees

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**Abstract:**

**Purpose:** The present article aims to analyze the relationship between e-leadership effectiveness and turnover intentions of employees working remotely, as well as to examine the mediating effect of relations with managers on that relationship.

**Design/methodology/approach:** An empirical, quantitative study was conducted among a large sample of remote workers (N=3050) from five European countries (France, Spain, Poland, Netherlands, United Kingdom) and two North American (United States and Canada). To verify the hypotheses, stepwise multiple regression and mediation were conducted.

**Findings:** Although all tested dimensions of e-leadership effectiveness (in terms of building involvement, consistency, adaptability, and mission, as well as in the areas of basic remote leader competencies: communicativeness, credibility, self-development and digital readiness) have a significant relationship with turnover intentions, the results of linear regression showed that only to a small degree the variance of turnover intentions is explained by the evaluation of remote competencies of leaders. However, the relationship with the supervisor significantly mediates the link between e-leadership effectiveness and turnover intentions.

**Practical implications:** The obtained results can be applied in the context of the selection and development of remote team leaders, as they indicate which competencies and behaviors are related to a lower turnover intentions. It is particularly important to take care of developing communicativeness and building trust and credibility, as well as encouraging leaders to improve their technological skills. In addition to developing competencies, it is particularly important to care for building relationships with remote employees, as their positive evaluation significantly mediates the willingness to leave the job.

**Originality/value:** This research significantly expands the literature on e-leadership, which is an emerging trend, as well as on turnover intentions of remote employees, which is of great importance in face of the "great resignation" economic trend of voluntarily quitting since the beginning of the pandemic. To the authors' knowledge, no studies have been published to date on the relationship between e-leadership effectiveness and turnover intentions of remote workers, nor has the mediating role of the relationship with superiors on that link been analyzed.

**Keywords:** E-leadership effectiveness, turnover intentions, remote work.

**JEL codes:** J24, J53, J63, M12, O15.

**Paper Type:** Research article.

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## **1. Introduction**

The COVID-19 pandemic has created a powerful impulse to change the work model towards remote work. Although in many organizations around the world, the role of remote work has been growing, working outside the organization's premises has been practiced for years, and the infrastructure for remote work was already being prepared (Felstead and Henseke, 2017; He *et al.*, 2020), it was the pandemic that dramatically changed the way of working. According to estimates, by the end of March 2020, over 3.4 billion people in 84 countries remained in their homes, meaning that many millions of workers switched to remote work mode (Bouziri *et al.*, 2020).

This transition to a digital work environment has created an urgent need to deal with data overload, work alienation, and employees increasingly weaker social relationships resulting from their isolation, reducing trust and sense of influence (Van Wart *et al.*, 2019). These issues affect the level of wellbeing of employees, and also a turnover intentions, which is difficult to monitor in remote work. Turnover intentions have always been a problem for organizations, as personnel rotation is one of the most costly processes (Boroş and Curşeu, 2013).

A high turnover can make it difficult to build a strong organizational culture and a cohesive team (Mullins, 2010), which is particularly important in the context of remote work, where employees do not have physical contact with each other. Remote work can exacerbate, among others, a sense of loneliness in the workplace, which affects employees withdrawing from the organization's life, and thus can lead to increased turnover intentions (Bowers *et al.*, 2022). Turnover intention is found to be significantly associated with leadership practices (Armstrong and Taylor, 2017; Sulamuthu and Yusof, 2018; Mey, Poisat and Stindt, 2021).

Therefore, sudden changes in the work model and dispersion of employees exposed an urgent need for effective e-leadership, which will enable organizations to adapt to the new situation and maintain the motivation of employees who do not have physical contact (Contreras, Baykal and Abid, 2020; Mey, Poisat and Stindt, 2021). Thus, e-Leadership is an important trend not only for rapid technological progress and the implementation of digital tools but also for adapting to the new reality of remote work and maintaining employees' motivation (Contreras, Baykal and Abid, 2020; Liu and Chiu, 2020).

The processes and behaviors associated with managing virtual teams have not yet been sufficiently studied (Liao, 2017). Despite the fact that employees often cite management practices as a reason for leaving their job (Reina *et al.*, 2018; Oh and Chhinzer, 2021), the relationships between turnover intentions and leadership effectiveness are still under-explored (Hom *et al.*, 2020; Rubenstein *et al.*, 2018). Additionally, turnover intentions among remote employees are rarely studied variables. To the authors' knowledge, no studies have been conducted on the

relationships between e-leadership, remote manager practices, and the quality of their relationships with turnover intentions among remote employees.

This article aims to fill a cognitive gap in mentioned area. In this paper, we discuss the issue of e-leadership, with particular emphasis on its impact on turnover intentions of remote employees. The issue of turnover intentions is addressed rather than actual turnover behaviors, as the authors note that the desire to leave does not always result in quitting the job, but it brings other negative consequences for the organization, such as reduced motivation or productivity.

Therefore, turnover intentions are particularly important in the context of remote work, where the lack of contact (or very sporadic contact) with the employee makes it difficult to recognize the intent to leave in a timely manner, and thus increases the pressure to introduce such management practices that will mitigate these intentions.

Since many different variables affect turnover intentions, including socialization processes (Meyer and Allen, 1997) or organizational identification (De Moura *et al.*, 2009; Boroş and Curşeu, 2013) among the studied variables, we also analyzed the mediating role of the relationship with superiors, as a factor affecting the quality and depth of socialization taking place in the organization and the desire to identify with it.

This study therefore expands the theory of Leader-Member exchange (LMX), as the effects of this exchange on turnover have not been explored clearly (Han and Jekel, 2011). The value of this article is an exploration of data from a large, international sample of participants, including both North America (United States and Canada) and Western and Eastern European countries. As most research on turnover intentions has been conducted on a North American population (Meyer and Allen, 1997; Oh and Chhinzer, 2021), and relatively few studies have been conducted in Eastern European countries (Boroş and Curşeu, 2013), the results of this study significantly expand the field of research in this area.

As a measure of the perception and assessment of e-leadership effectiveness, the model of Leadership Effectiveness Index (Denison, Kotrba and Castaño, 2012) was used, which investigate how employees assess different managerial practices and behaviors grouped into four traits: involvement, consistency, adaptability, mission. The model was enhanced by authors (Tokar, Oleksa-Marewska, 2021) to make it more compatible with remote work challenges, and four additional competencies were added: communicativeness, credibility, self-development and digital readiness.

To present the research findings and their relevance, the paper covers the following sections: theoretical framework based on the job demands–resources (JD-R) model and Leader-member exchange (LMX) theory, a literature review analyzing the e-leadership and turnover in remote work context, as well as the role of relationships with leaders in shaping the turnover intentions. The theoretical part of the article is

concluded with hypotheses, which are then verified in the empirical section, presenting the research design, sample, research procedure, the performed statistical analyses and the obtained results. In the discussion, we point out the importance of the chosen e-leadership strategies and competences, and explain the results. The discussion culminates in the proposal of a leadership strategies and competencies model, which can be practically used in managing the turnover of remote employees.

## **2. Literature Review**

The authors have chosen the job demands–resources (JD-R) model and Leader–member exchange (LMX) as a theoretical framework. The JD-R model assumes a relationship between job demands (the degree of risk associated with a job) and job resources (personal and organizational characteristics that enable employees to meet job demands), having implications for both management practices and employees attitudes (Demerouti *et al.*, 2001).

According to Bakker and Demerouti (2007) leadership strategies are perceived as organizational resources that impact how employees approach to work-related issues. Other conceptualizations present leadership strategies as an separate factor affecting both resources and demands (Schaufeli, 2015) and therefore leadership effectiveness is a valuable variable to explain the turnover intentions. The Leader–member exchange (LMX) theory refers to the quality of the relationship between an employee and his/her supervisor (Graen, 1976).

High-quality LMX employees are more likely to receive assistance and attention from their managers, which typically leads to higher satisfaction and can affect lower turnover intentions (Han and Jekel, 2011). Both theories are worth exploring in the context of remote work, in which both job demands and resources, as well as relationships with leaders, require further research.

### **2.1 E-leadership as an Emerging Trend**

The concept of "e-leadership" has appeared in literature for nearly 20 years and refers to leaders who primarily conduct leadership processes through electronic channels (Zaccaro and Bader, 2003). A literature review shows that the majority of articles created between 2000-2022 on the subject of leader-employee interactions through information and communication technology (ICT) and how the digital revolution has impacted the face of leadership have received relatively limited attention from researchers (Roman *et al.*, 2019; Van Wart *et al.*, 2019; Liu and Chiu, 2020; Torre and Sarti, 2020).

What is worth mentioning, the majority of research on organizational leadership has been conducted in non-virtual work environments (Bartsch *et al.*, 2021). The lack of in-depth research is particularly acute given the fact that many leaders spend the majority of their time communicating remotely, and the diffusion of information and

communication technology significantly alters the relationships between employees and their superiors.

Research on the relationship between technology and leadership was initiated by Avolio *et al.* (2000). The authors analyzed work environments in which leaders and their subordinates communicated using advanced information technology. They coined the term e-leadership to encompass the emerging context of leadership research. They defined the most current and widely accepted definition of e-leadership, as understood by researchers as: a social influence process mediated by advanced information technology (AIT) that aims to change attitudes, feelings, thinking, behavior, and performance (Avolio *et al.*, 2014).

The authors emphasize the central role of technology, which enables a new way of working. Technological change impacts organizational leadership. With e-leaders' readiness to use it, daily communication and building communities based on mutual trust are possible. This concept aligns with the work of Pulley and Sessa (2001), who describe the need for supporting distributed leadership through ICT.

Roman Van Wart *et al.* (2019) derive their definition of e-leadership based on the Six E-Competency (SEC) Model, which leads to effective e-leadership: e-communication, e-social skills, building e-teams, managing e-change, e-technology skills, and e-credibility. E-leadership itself is conceptualized by these authors as the effective use and combination of electronic and traditional communication methods.

This means being aware of current information and communication technologies, selectively adopting new information and communication technologies for oneself and the organization, being able to choose from a variety of traditional and electronic methods to effectively achieve different goals, and having technical competencies in using selected information and communication technologies.

Cortellazzo *et al.* (2019) in their search for the skills that characterize leaders in the digital era, in order to be effective, emphasize the importance of Communicating through digital media, High-speed decision making, Managing disruptive change, Managing connectivity, The renaissance of technical skills, and Developing leadership skills in the digital era.

Many proposals used in general leadership theories can be applied to e-Leadership (Liu *et al.*, 2020). However, it is essential to go beyond traditional leadership theories to explain the role of leaders in remote work environments (Kahai *et al.*, 2013; Cortellazzo, Bruni and Zampieri, 2019; Roman *et al.*, 2019; Darics, 2020).

Based on the literature analysis, both regarding traditional leadership and e-leadership, the authors Tokar and Oleksa-Marewska, taking the Denison Leadership Development Model as a reference point, in which emphasis was placed directly on leadership strategies that influence organizational effectiveness and involve the main

organizational culture traits: involvement, consistency, adaptability, and mission (Denison, Kotrba and Castaño, 2012), enhanced the model with four key competencies, which are, according to them, essential for achieving organizational effectiveness, especially in the era of remote work.

These competencies are: digital readiness, building trust and credibility, effective communication, and self-development for managers. (Tokar and Oleksa-Marewska, 2021). We have noticed the need to supplement the model with leadership competencies that are fundamental and universal for all areas in the Denison Leadership Development Model and that enable the implementation of behavioral strategies within the four leadership traits. The enriched model is presented in Table 1.

**Table 1.** Leadership effectiveness strategies and core remote competencies.

Leadership Effectiveness Strategies			
Mission	Adaptability	Involvement	Consistency
<ul style="list-style-type: none"> <li>• Creates shared vision</li> <li>• Defines strategies and direction</li> <li>• Defines goals</li> </ul>	<ul style="list-style-type: none"> <li>• Creates changes</li> <li>• Promotes organizational learning</li> <li>• Customer/patient focus</li> </ul>	<ul style="list-style-type: none"> <li>• Empowerment</li> <li>• Team organization</li> <li>• Organizational capability</li> </ul>	<ul style="list-style-type: none"> <li>• Core values</li> <li>• Works to reach engagement</li> <li>• Coordination</li> </ul>
Core remote competencies			
<ul style="list-style-type: none"> <li>• Credibility</li> <li>• Communicativeness</li> <li>• Self-development</li> <li>• Digital readiness</li> </ul>			

**Source:** Own elaboration based on The Denison Leadership Development 360 Survey; <https://www.denisonconsulting.com/wp-content/uploads/2019/06/the-denison-leadership-development-survey.pdf>.

Given that there is not one definition of e-leadership, as it is a multidimensional phenomenon that should be studied based on different disciplines, and from different levels of analysis: macro (e-leadership and organizations) and micro (e-leader skills and leading virtual teams) (Avolio *et al.*, 2000 ; Cortellazzo *et al.*, 2019; Roman *et al.*, 2019; Bass *et al.*, 2020), the authors assumed that in the context of remote work, the e-leadership concept requires special analysis from the perspective of the effectiveness of leaders' actions, especially in terms of their impact on the attitudes and decisions of employees, such as turnover intentions.

## 2.2 Turnover Intentions of Remote Employees

The phenomenon of personnel turnover has been explored for many years. It is a costly and troublesome process, especially for experienced and specialized employees, who often leave due to greater chances of finding a new, interesting job

(Armstrong and Taylor, 2017). An important aspect is primarily voluntarily leaving, which means employees leaving for non-material, intrapsychic reasons (Oh and Chhinzer, 2021).

Therefore, the process of an actual employee turnover should be preceded by an analysis of turnover intentions, which are defined as a purposeful and conscious desire to leave the organization (Tett and Meyer 1993). Not every employee who wants to leave the organization takes this step, but their desire to leave has an impact on various attitudes, such as reduced motivation, OCB, or job satisfaction. Hence, it is so important to undertake an analysis of turnover intentions from an organizational perspective.

The determinants of staying or voluntarily leaving organizations can be classified into different categories: individual, occupational, organizational, and environmental (Steil *et al.*, 2022). Over time, when the emphasis shifted from merely reporting correlations to modelling the turnover process, different variables affecting the turnover were classified as proximal and distal. Among the most frequently mentioned proximal factors affecting turnover intentions are organizational commitment and organizational identification (Boroş and Curşeu, 2013).

Particularly the affective commitment constitutes an important moderator between the employees' intent to quit and the actual turnover (Wang, Weng and Jiang, 2020). Other proximal variables are e.g., role states, psychological contracts, and job satisfaction, while among distal variables are work experiences, socialization experiences, management practices, personal characteristics, and environmental conditions (Meyer and Allen, 1997), as well as organizational prestige (De Moura *et al.*, 2009).

Employer branding also plays an important role in retention, affecting employee satisfaction and attracting attention from employees in the nowadays uncertain and changing environment (Bharadwaj, Khan and Yameen, 2022).

In the era of the Covid-19 pandemic, additional factors also influenced turnover intentions, primarily job insecurity caused by instability in the labor market and the political arena (Bellotti *et al.*, 2021; Hong, Petsangsri and Cui, 2021; Jung, Jung and Yoon, 2021; Khawaja *et al.*, 2022), as well as a deterioration of physical and mental health. Although remote work provides greater autonomy in terms of time and space, it leads to increased workload and additional strain on employees, which requires greater self-regulation and effort (Bathini and Kandathil, 2019), which can also contribute to increased turnover intentions.

Remote workers, who work outside the company's headquarters, often have limited physical contact, which can exacerbate feelings of alienation from the work group and even feelings of loneliness. Employees struggling with isolation or mental health difficulties need emotional social support in the context of staying in the

organization (Gewurtz *et al.*, 2022). Support can be received from colleagues, but in the case of remote work and limited contact opportunities, managers are an important source of support and various relational experiences.

However, limited studies have considered the role of leadership practices on turnover dynamics (Rubenstein *et al.*, 2018; Hom *et al.*, 2020; Oh and Chhinzer, 2021). Most of the research on the impact of leadership on retention is primarily focused on the relationship between leadership and actual turnover rate, and few studies have focused on individual turnover or turnover intentions (Clinger, 2018).

Considering managerial practices, perceived as distal factors affecting turnover intentions (Meyer and Allen, 1997), it is crucial to investigate the relationship between the assessment of leadership practices and turnover intentions, particularly in the perspective of remote work. Therefore, the following hypotheses were formulated:

**H1:** *The higher the level of e-leadership effectiveness, the lower the willingness to change jobs.*

**H1a.** *The higher the effectiveness in terms of the adaptability strategies, the lower the willingness to change jobs.*

**H1b.** *The higher the effectiveness in terms of the involvement strategies, the lower the willingness to change jobs.*

**H1c.** *The higher the effectiveness in terms of the consistency strategies, the lower the willingness to change jobs.*

**H1d.** *The higher the effectiveness in terms of the mission strategies, the lower the willingness to change jobs.*

**H1e.** *The higher the effectiveness in terms of the core remote competencies, the lower the willingness to change jobs.*

### **2.3 The Relationship between Leadership and Turnover Intentions**

Although the type and quality of leadership is one of the main job resources and is considered to be a well-researched variable in relation to turnover, there is insufficient research dedicated to this field (Oh and Chhinzer, 2021). Research on these variables often focuses on specific leadership styles. Studies on these variables mostly focus on specific leadership styles.

A literature review of leadership theory and turnover conducted by Govindaraju (2018) showed that leadership styles have an impact on employee retention- whenever leadership style is unfavorable intention to leave is raised (Govindaraju, 2018). Other studies have shown that turnover is reduced by transactional leadership (Park and Pierce, 2020), ethical leadership (Babalola, Stouten and Euwema, 2016), entrepreneurial leadership (Yang, Pu and Guan, 2019), or transformational leadership (Sulamuthu and Yusof, 2018; Tian *et al.*, 2020), which for example



moderates emotional exhaustion and the desire to leave the organization (Green, Miller and Aarons, 2013).

Some research results indicate specific managerial strategies that are associated with a lower desire to leave the organization, among them, empowerment, respect and individual approach, motivating and stimulating employee's interest in work, acknowledging employee's experience (Mey, Poisat and Stindt, 2021).

It is worth further research on specific leader behaviors, hence the concept of leadership effectiveness (Denison, Kotrba and Castaño, 2012), which highlights 4 areas of behavior, enhanced by Tokar and Oleksa-Marewska (2021) with an additional bundle on key leader competencies in remote work seems to be an adequate point of reference in these studies.

Bearing in mind that the importance of transformational leadership in relation to turnover intentions is often emphasized, including its role in creating vision, empowerment, and engaging employees (Morin *et al.*, 2015; Sulamuthu and Yusof, 2018; Tian *et al.*, 2020; Mey, Poisat and Stindt, 2021), it is assumed that among the analyzed leader behaviors, those in the area of involvement (promoting cooperation, empowerment, building a team) and in the area of core remote competencies, which emphasize the leader's communicativeness, as well as self-developing and building credibility and trust, will have a particularly significant impact on explaining the intention to leave the organization. Thus, the following hypothesis has been formulated:

**H2:** *The variability in turnover intentions is most explained by the strategies of involvement and core remote competencies.*

Given the importance of leadership in relation to turnover intentions, it is also important to consider the relationship between employees and their superiors. The LMX theory shows that behaviors and relationships with leaders impact organizational commitment, job satisfaction, job performance, and turnover intentions (Degen and Alegre, 2010; Banks *et al.*, 2014). A supportive relationship with superiors can improve the turnover rate (Mullins, 2010).

The quality of the relationship between the subordinate and the superiors is significant in shaping turnover intentions, especially when the employee is satisfied with their job and the relationship with their superior, the likelihood of leaving decreases (Han and Jekel, 2011). Therefore, it has been decided to verify whether the quality of the relationship mediates the relationship between the evaluation of e-leadership effectiveness and turnover intentions:

**H3:** *A relationship with the supervisor mediates the link between the e-leadership assessment and turnover intentions.*

### **3. Methodology**

#### **3.1 Research Design and Procedure**

The research took place in February-March 2022. Participants completed the survey electronically, and were selected for the sample using a criterion-based sampling method (criterion: remote work or hybrid work, with a majority of days working remotely) with the help of external research agencies. The respondents completed the survey in their native languages (all scales were translated and reverse-translated by native speakers).

The study was designed based on the ethical guidelines of the WMA Declaration of Helsinki (1964 with later amendments), according to which the respondents were informed about the right to withdraw from the study at any time, without giving any reason. Before starting the study, the respondents were asked about the mode of their work (the research script automatically rejected people who selected the ‘traditional’ mode). They were then requested to provide informed consent to participate in the study, which was explained and described in the manual.

The subject of the research was outlined, as well as the number of questionnaires and the possible psychological consequences of completing the survey (emotional states related to the assessment of individual aspects). The study design was approved by the academic ethics committee of the University of Lower Silesia.

The Leadership effectiveness Index (LEI) was used to evaluate the behavioral strategies applied by managers. It is a shortened version of the Denison Leadership Development Survey, which in validation studies has shown that Cronbach’s alpha value was greater than 0.90 for each of the four traits (Denison, Kotrba and Castaño, 2012).

Although the Leadership Effectiveness Index (LEI) has not yet been validated, after consulting with the authors of the questionnaire, we decided to use the LEI version because it consists of 12 items selected through statistical analysis among the 96 items of the original questionnaire. It is an effective tool for measuring leadership effectiveness. The use of the LEI shortened the duration of the study, allowing for greater reliability in the completion of the survey.

The LEI scale evaluates four behavioral strategy bundles: Involvement (items related to empowerment, team orientation, and organizational capability) with a Cronbach's alpha of 0.83, Consistency ((items related to adhering to core values, promoting engagement and coordination) with a Cronbach's alpha of 0.82, Adaptability (creating changes, promoting organizational learning and being customer/patient-oriented) Cronbach’s  $\alpha$  was 0.77, and Mission (creating shared vision, defining goals and main strategies) with Cronbach’s  $\alpha$  0.80.

Additionally, four questions were added to the tool to verify the universally identified, core competencies for leaders of remote/hybrid workers: communication, credibility, self-development, and digital readiness. The Cronbach's alpha value for Core Remote Competencies bundle was 0.82.

Supervisor relationships were evaluated using the subscale from the Organizational Climate for Remote Work questionnaire, by K. Oleksa-Marewska, which is currently being validated in its third round of international research. The scale measures the degree of partnership and mutual trust in the relationship with the supervisor in a remote work context and is composed of three items: *My supervisor knows he/she can rely on me for business, and I know I can rely on him/her*; *My supervisor treats me as a partner and respects me*; *In the case of professional and private difficulties, I can count on the understanding of my supervisor and his/her support*. The Cronbach's alpha for this subscale was 0.83.

Turnover intentions were measured using a single question: *To what extent are you considering changing your job in the nearest future?* This question assesses the desire to change jobs, not actual turnover, which the respondent could refer to on a 5-point scale: 1-Not at all, 2 - Slightly, 3- moderately, 4- Quite a bit, 5-Extremely.

### 3.2 Sample

The research was conducted on a group of 3050 respondents working remotely or in a hybrid mode (with a majority of days working outside of the office) in seven countries: France (n=497), Netherlands (n=273), Poland (n=511), Spain (n=478), United Kingdom (n=483), United States (n=488) and Canada (n=300). The respondents represented the following industries: IT, sales and marketing, HR, education, administration, logistics, finance and accounting, medicine, biological sciences, business analytics, and specialized analytics, automation and electronics, industrial engineering, as well as management.

The group consisted of 57% women and 43% men, 7 respondents identified as non-binary. The majority of respondents (62%) had secondary education, while the remaining respondents had higher education (17% with a bachelor's degree, 6.8% with an engineering degree, 13% with a master's degree, and 1.2% with a doctorate). The most respondents (44%) were employed in companies with over 250 employees, next 22% work in organizations with 50-249 employees, 19% in small companies with 10-49 employees, and 15% in micro-enterprises employing 2-9 people. The majority of respondents (71%) started working remotely after the outbreak of the pandemic.

### 3.3 Analyses and Results

Statistical analysis was conducted with the use of the software program R. In order to verify the hypotheses, Spearman correlations between variables were used, as well

as stepwise multiple regression, to study the leadership traits that explain the level of turnover intentions. Then the SEM model with one mediator was performed to analyze the mediating role of relationship with leaders on the relation between leadership effectiveness and turnover intentions.

In the conducted analysis, the assessment of leadership effectiveness, core remote competencies and relationship with the superior constituted independent variables, while the turnover intentions constituted a dependent variable. According to assumptions, independent variables were found to be significantly and negatively correlated with turnover intentions (Table 2).

**Table 2.** Spearman's rank correlation coefficients between turnover intentions and independent variables

Variable	LEI	Leadership Mission	Leadership Consistency	Leadership Involvement	Leadership adaptability	Leadership Remote Competencies	Relationship with supervisor
Turnover intentions	-0.21*	- 0.19*	- 0.19*	- 0.19*	- 0.19*	-0.21*	-0.30*

**Note:** \*  $p < 0.001$

**Source:** Own research.

The obtained correlation results confirm the H1 hypothesis, as well as H1a, H1b, H1c, H1d and H1e. With increased assessments of leadership effectiveness and each of leadership practices traits, the willingness to change jobs decreases.

In order to examine what percentage of the turnover intentions is explained by an assessment of leadership practices and competencies, a stepwise multiple regression was conducted by introducing traits of leadership effectiveness and core remote competencies as independent variables. Before conducting the regression, an analysis of multicollinearity was carried out. The variance inflation factor (VIF) for each variable was between 3.35 and 4.45, which means that involvement, consistency, mission, adaptability and core remote competencies are not collinear.

The Breusch–Pagan test was applied to verify the assumed homoscedasticity of the variance. The results showed that the variance of the residuals was different, indicating that the homoscedasticity of the variance was not confirmed ( $\chi^2 = 2.24$ ;  $p > 0.05$ ). A Kolmogorov–Smirnov test with Lilliefors correction was conducted to verify the normality of the residual values' distribution for the model as tested. The analysis showed that the distribution of the results for regression model residuals was statistically similar to the theoretical normal distribution (KS = 0.12;  $p < 0.01$ ). Then the regression was tested, the results are presented in Table 3.

**Table 3.** Stepwise multiple regression estimating the influence of independent variables on turnover intentions.

Variable	B	s.e.	t	$\beta$	p
Constant	3.60	0.10	35.79	NA	<0.001
Involvement	-0.02	0.04	-0.63	-0.02	>0.05
Consistency	-0.05	0.04	-1.19	-0.04	>0.05
Adaptability	-0.05	0.04	-1.42	-0.05	<0.05
Mission	0.02	0.04	0.51	0.02	>0.05
Core remote competencies	-0.12	0.04	-2.89	-0.11	>0.01

**Source:** Own research.

The regression analysis showed a significant prediction ( $F(5, 3044) = 22.83$ ;  $p < 0.001$ ). The analysis of the  $R^2$  coefficient value showed that the regression model of the included independent variables explained about 4% of the willingness to change jobs, which is a low result. Among the variables introduced to the model, only core remote competencies significantly explained the variability of turnover intentions. In the next step, the mediating effect of relationship with superior on the relationship between leadership effectiveness and turnover intentions was analyzed. The tested model is presented in Figure 1.

In order to verify the predictions of the model, structural equation modeling was carried out in the R program using the "lavaan" package. The MLR (*maximum likelihood estimation with robust (Huber-White) standard errors*) algorithm was used in the calculations. The values of the CFI, TLI, and NFI measures were 1.00, which indicates a good fit of the data to the tested model.

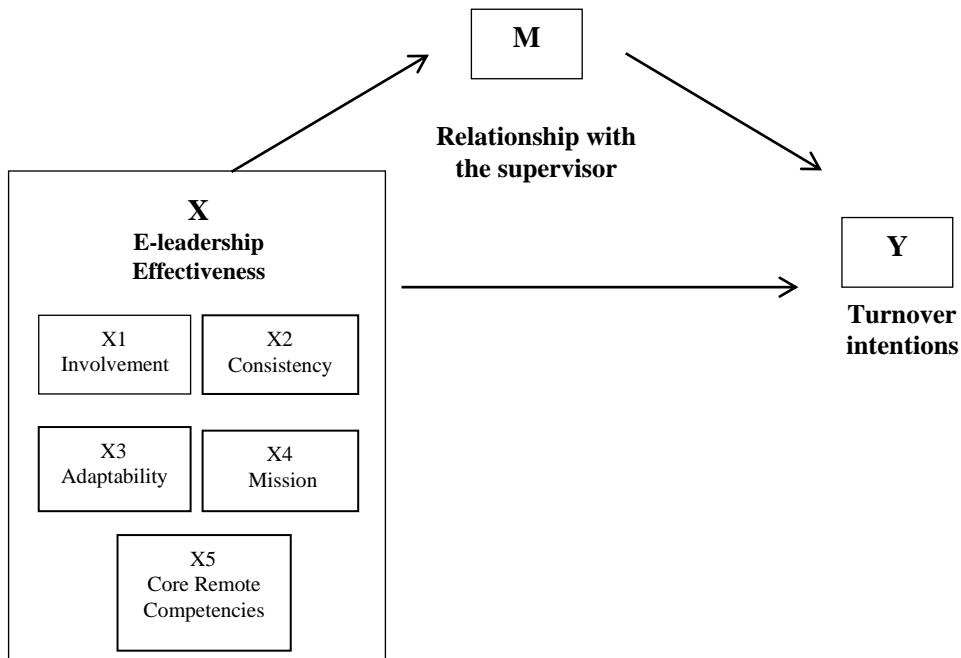
The value of the SRMR measure (Standardized Root Mean Square Residual), which determines the difference between observed correlations and correlations assumed in the model (allows for an assessment of the average size of the discrepancy between observed and expected correlations as an absolute measure of the model fit criterion), was 0.00, which indicates a good fit of the data to the tested model.

The value of the AGFI measure (Adjusted Goodness-of-Fit statistic) determines how much the empirical model explains the variance of the theoretical model (taking into account the complexity of the model and the size of the sample). This measure was 1.00, and the closer the value is to 1, the better the explanation of the theoretical model by the data.

Secondly, two steps were conducted based on James and Brett (1984) and Baron and Kenny (1986):

- 1) regressing the e-leadership effectiveness assessment on mediator- relationship with the superior,
- 2) regressing mediator on turnover intentions.

**Figure 1.** Conceptualization of variables in a mediation model for the interaction between e-leadership effectiveness and turnover intentions and the mediating role of relationship with the supervisor on that interaction.



**Source:** Own research

Regression analyses have shown that the variable Relationship with Supervisor is significantly influenced by an increase in the results of Core Remote Competencies ( $\beta = 0.24$ ;  $Z = 6.19$ ), as well as an increase in leadership effectiveness in Consistency ( $\beta = 0.13$ ;  $Z = 3.42$ ), Involvement ( $\beta = 0.11$ ;  $Z = 2.90$ ), and Adaptability ( $\beta = 0.11$ ;  $Z = 3.33$ ). The variable Relationship with Supervisor is not significantly influenced by a change in the assessment of leadership effectiveness in the Mission trait ( $\beta = -0.03$ ;  $Z = -1.04$ ;  $p > 0.05$ ).

In the next step, the regression analysis showed that a decrease in the results of the variable Relationship with Supervisor had a significant impact on turnover intentions (willingness to change jobs) ( $\beta = -0.24$ ;  $Z = -11.10$ ;  $p < 0.001$ ). The analysis of explained variance coefficients showed that the variable Willingness to change jobs (turnover intentions) was explained by the model at 8.03% ( $R^2 = 0.08$ ).

The mediation analysis of the variable Relationship with Supervisor showed that for core remote competencies and three out of four traits of leadership effectiveness (involvement, consistency, adaptability) results were significant, only the indirect effect of relations between mission trait and relationship with supervisor was statistically insignificant. All results are presented in Table 4.

**Table 4.** Results of indirect effects obtained in mediating analysis

Indirect effects between variables	<i>B</i>	s.e	<i>Z</i>	DPU	GPU	$\beta$
X1 Involvement-M- Y	-0.03	0.01	-2.82**	-0.05	-0.01	-0.03
X2 Consistency-M- Y	-0.03	0.01	-3.26**	-0.05	-0.01	-0.03
X3 Adaptability-M- Y	-0.03	0.01	-3.14**	-0.05	-0.01	-0.03
X4 Mission- M- Y	0.01	0.01	1.03	-0.01	0.03	0.01
X5 Core Remote competencies- M- Y	-0.07	0.01	-5.48***	-0.09	-0.04	-0.06

**Note:** X (X1-X5 independent variables)- e-leadership effectiveness; M (mediator)- relationship with the superior; Y (dependent variable)- turnover intentions

\*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

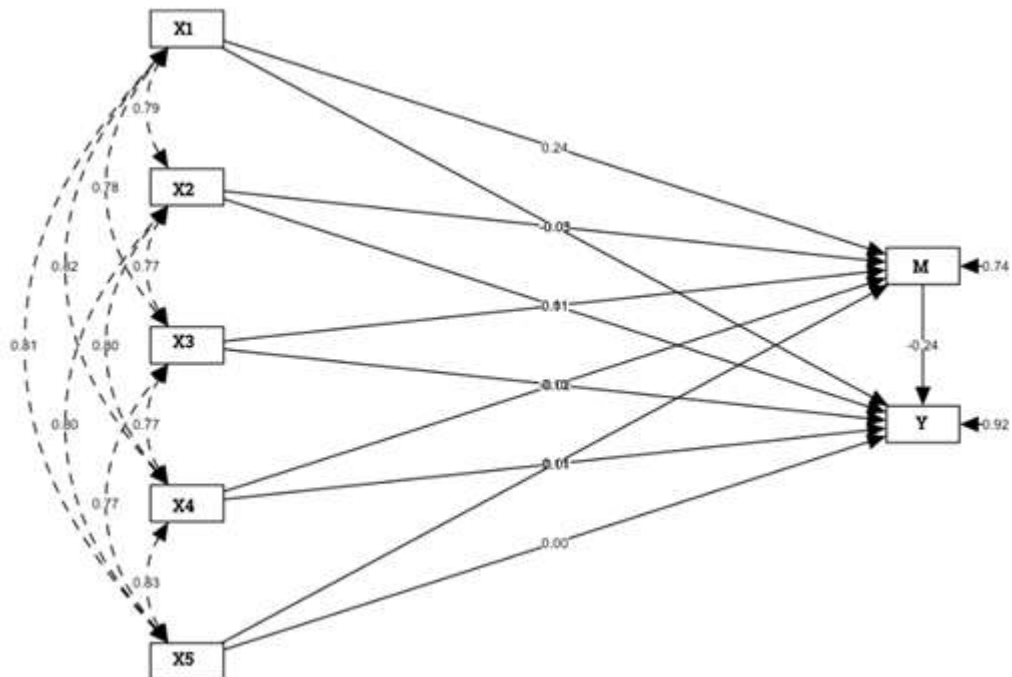
**Source:** Own study.

Although the regression model did not show that the dimensions of leadership effectiveness significantly explain the variability of turnover intentions (only to a small extent it is explained by the assessment of superiors' remote competencies), the structural model shows that there is a significant mediating effect of the relationship with the superior on the relationship between the assessment of leadership effectiveness and the intention to leave.

The results indicate that leadership effectiveness does not directly affect turnover intentions, but it affects indirectly through the relationship with the superior, which is confirmed by the estimated mediation effects (with the exception of the effect for the dimension of mission, which does not interact with the relationship with the superior, and thus does not affect turnover intentions). To sum up the results Figure 2 is presented.

#### 4. Discussion

The research aimed to verify the relationship between e-leadership effectiveness in remote work and turnover intentions, as well as the impact of relationships with superiors on these intentions. Although correlation analyses showed the presence of significant relationships between overall assessments of leaders' effectiveness and individual bundles of behaviors (in terms of building involvement, adaptability, consistency and mission) and competencies important from the perspective of remote work (communicativeness, credibility, self-development, and digital readiness), these relationships are weak.

**Figure 2.** The structural model of tested variables

**Source:** Own research.

More importantly, the regression model showed that dimensions of leadership effectiveness and core remote competencies only explain about 4% of the variability in turnover intentions, none of the four dimensions of leadership effectiveness has an impact on willingness to change job, only the bundle of core remote competencies, understood as a complement and foundation of e-leadership dimensions, has such an impact. The lack of explanation of turnover intentions variability by the assessment of superiors' competencies and behaviors is consistent with some other studies (Tourangeau *et al.*, 2010).

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The lack of explanation of turnover intentions variability by the assessment of superiors' competencies and behaviors is consistent with some other studies (Gibson and Petrosko, 2014). Perceived job satisfaction and relationship with the supervisor affect increased organizational identification, and as a result, the desire to stay in the organization (Bharadwaj, Khan and Yameen, 2022).

According to the results of other studies, positive relationships with superiors are negatively related to turnover intentions (Han and Jekel, 2011; Mete, Sokmen and Sokmen, 2021), which were also confirmed by our research.

According to other studies, for e-leaders operating in virtual environments, having social competencies alone without the ability to use them on various virtual communication platforms may not be sufficient to achieve the goal of building remote relationships with employees (Cortellazzo *et al.*, 2019; Roman *et al.*, 2019), thus, it is possible why the assessment of competencies has a smaller impact than the assessment of relationships with superiors.

Additionally, leader's competencies e.g. supportive communication, often affects the built leader-member exchange, and both variables have an impact on turnover intentions (Michael, 2014). In the study of Yue *et al.* (2022), findings shows that the extent to which supervisors adopted empathetic communication during organizational change and remote work in pandemic, had considerable influence on their supervisees' affective trust, relationship perception, and ultimately, their turnover intention.

Based on the results and literature analysis, it can be concluded that e-leaders' competencies alone are not a strong predictor of willingness to leave the organization, unless they are embedded in the context, e.g., relationships with that leader. When the assessment of competencies goes hand in hand with a positive assessment of relationships with superiors, turnover intentions decrease to a greater extent.

Referring to the JD-R model, supportive leader with well-developed key competencies and behavioral strategies is an important resource enabling to cope with work demands. A leader with highly developed competencies but without a positive relationship with an employee does not increase his organizational resources to a large extent - only a mutual relationship causes the leader to be able to use his competencies to support the employee with whom he is in a partnership relations.

## **5. Practical Implications**

Obtained results carry practical implications for management of remote employees and HR processes. Based on the research discussed above, employees who perceive their supervisors as supportive and have positive relationships with them are less likely to have intentions of leaving the organization. Therefore, organizations can take steps to improve the relationship between supervisors and employees in order to decrease turnover intentions.

One way to improve relationships between remote supervisors and employees is to establish clear and consistent communication channels. This can include regular virtual meetings, phone or video calls, and instant messaging platforms. By establishing these channels, supervisors and remote employees can stay connected and communicate effectively. Additionally, organizations can provide remote supervisors with training and resources on how to effectively manage and communicate with remote employees.

This can include training on virtual communication techniques, time management, and building trust and engagement with remote teams. Another way to improve relationships between remote supervisors and employees is to create virtual team-building opportunities. This can include virtual social events, online team-building exercises, and remote employee recognition programs. These activities can help remote employees feel more connected to their teams and supervisors.

Another way to improve the relationship between supervisors and employees is to provide training and development opportunities for supervisors to develop their leadership skills. self-development (understood also as openness to new solutions) and technological proficiency, which also increases the leader's authority in a remote work environment. Also it is essential to take care of HR processes. It is important to prioritize recruiting leaders who are well-suited to leading remote teams. To do that it is worth to consider the potential leader's communication and collaboration skills.

Leaders who are able to effectively communicate and collaborate with remote teams are more likely to build positive relationships with remote employees. HR can assess these skills through interviews, assessment centers, reference checks, and behavioral-based assessments. It's also important for HR to provide training and development opportunities for new leaders to develop the skills they need to effectively lead remote teams.

This can include training on virtual communication techniques, building trust and engagement with remote teams, as well as all of behaviors that enable to empower employees, promote organizational learning, engagement and clear vision. It is important to note that improving the leadership effectiveness as well as the relationship between supervisors and employees is a continuous effort.

The organization should create an environment where leaders can grow and develop crucial skills, and both supervisors and employees have the tools and support they need to build and maintain positive relationships.

## **6. Limitations and Further Research**

A limitation of the study consists in the use of self-assessment questionnaires, as answers tend to be influenced by the mood of the respondents and their personal traits (Burke, Brief and George, 1993).

Although turnover intentions, and assessments of leadership practices and relationship with superiors are subjective so that could be assessed through self-assessment, it would be essential to compare these with objective measures, especially with the actual turnover rate as well as assessing superiors' competencies based on standardized criteria adopted by the organization, such as those outlined in job descriptions and verified during the selection or appraisal process.

It would also be worthwhile to repeat the measurement using self-assessment questionnaires after a period of time, which reduces the distortion of the results under the influence of the mood the respondent was experiencing at the time. To minimize the subjectivity factor, a large study group was used in the current study (N=3050) and conclusions were drawn based on many responses. It is also worth noting that a positive assessment of the relationship with the superior may affect the assessment of his competencies (it may cause the "halo effect" and contribute to a more positive assessment of the leader's skills due to the sympathy the employee has for him).

Particular directions for further research can be indicated. Conducting longitudinal studies in which actual turnover would be monitored and compared to the turnover intentions obtained in this study could show whether the implementation of improvements in the development of leaders' competencies and behaviors leads to any changes in retention.

Additionally, it would be beneficial to expand the model with additional variables: e-leadership effectiveness only explains 4% percent of the variance in turnover intentions, and the assessment of relationships with superiors explains 8%. This means that there are other important factors affecting the willingness to leave an organization, so adding organizational variables (such as an assessment of organizational culture, organizational climate) as well as other employee attitudes (job satisfaction, organizational commitment, level of engagement, etc.) to the model could be beneficial to expand the research field.

In future research, it would be worth conducting an analysis of variance to determine whether there are any statistically significant differences between different groups mainly due to the industry. The lack of stronger correlations in this study may be due

to the fact that different occupational groups have different specificities and different needs in terms of superiors' competencies, so the analysis of the whole sample narrows the possibilities of generalizing the results.

The study verified the industries in which the respondents work, but the groups are heterogeneous in terms of size, which would make it difficult to make a reliable comparison, so it is worth taking up this issue in further research.

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