



MESTRADO EM ESTRATÉGIA DE INVESTIMENTO E
INTERNACIONALIZAÇÃO

**The invisible bond: Exploring the sequential mediation of
interpersonal connections and engagement in the relationship
between the onboarding process and talent retention**

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Lisboa

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Resumo

Num mercado de trabalho cada vez mais competitivo, a retenção de talentos tornou-se um dos maiores desafios para qualquer organização. Neste cenário, o processo de *onboarding* assume um papel estratégico, porque além de facilitar a integração dos colaboradores, contribui para intensificar os laços com os pares e as chefias diretas, os níveis de *engagement* e, consequentemente, a permanência na organização. Participaram no estudo 280 trabalhadores por conta de outrem. Esta investigação adotou uma abordagem quantitativa, de natureza transversal, para validar as hipóteses propostas. Os dados foram recolhidos junto de uma amostra conveniência através de um inquérito por questionário. Os resultados revelaram que o processo de *onboarding* teve um impacto significativamente positivo na retenção de talentos. Também se apurou que tanto as relações interpessoais, como o *engagement* atuam como mediadoras na relação entre o processo de *onboarding* e a retenção de talentos, confirmando um efeito de mediação sequencial. Estas conclusões reforçam que um processo de *onboarding* eficaz fortalece as relações interpessoais, impulsiona o *engagement* e, consequentemente, aumenta a intenção de permanência dos colaboradores.

Palavras-chave: processo de *onboarding*, relações interpessoais, *engagement*, retenção de talento, mediação sequencial.

Abstract

In an increasingly competitive labour market, talent retention has become a critical challenge for organisations. In this context, the onboarding process assumes a strategic role, as it not only facilitates employee integration but also strengthens ties with peers and direct supervisors, enhances engagement levels, and consequently fosters retention within the organisation. This study involved 280 employees. A quantitative, cross-sectional approach was adopted to validate the proposed hypotheses. Data were collected from a convenience sample of employees through a questionnaire survey. The results revealed that the onboarding process had a significantly positive impact on talent retention. Furthermore, both interpersonal connections and engagement were found to mediate the relationship between the onboarding process and talent retention, confirming a sequential mediation effect. These findings reinforce that an effective onboarding process strengthens interpersonal relationships, boosts engagement, and thereby enhances talent retention.

Keywords: onboarding process, interpersonal connections, engagement, talent retention, sequential mediation.

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List of acronyms and abbreviations

AMOS	-	Analysis of Moment Structures
AVE	-	Average Variance Extracted
B	-	Unstandardized beta
CFA	-	Confirmatory Factor Analysis
CFI	-	Comparative Fit Index
CI	-	Confidence intervals
CR	-	Composite Reliability
HI90	-	Higher bound at 90%
LO90	-	Lower bound at 90%
M	-	Mean
Max	-	Maximum
Min	-	Minimum
MSV	-	Maximum Shared Variance
p	-	p-value
RMSEA	-	Root Mean Square Error of Approximation
SD	-	Standard-deviation
SE	-	Standard error
SEM	-	Structural Equation Modelling
SPSS	-	Statistical Package for the Social Science
SRMR	-	Standardized Root Mean Square Residual
TLI	-	Tucker-Lewis Index
χ^2/df	-	Chi-Square/ Degrees of freedom

Introduction

The modern labour market is characterised by heightened competitiveness, rapid technological evolution, and shifting employee expectations (Mazlan & Jambulingam, 2023). Organisations increasingly face challenges in attracting and retaining qualified talent, which jeopardises operational stability and long-term strategic success (Yi, 2024). In this context, employee turnover has become a significant concern due to its high financial and human costs (Al Kurdi & Alshurideh, 2020). To mitigate these risks, it is essential for organisations to develop effective talent retention strategies that address employees' needs and expectations from the outset of their professional journey (Král et al., 2022).

In response to this scenario, the onboarding process has assumed a strategic role in human resource management (Carpenter, 2023). Understood as the set of structured practices aimed at facilitating the effective integration of new employees, onboarding not only accelerates adaptation to organisational culture but also fosters the development of positive interpersonal relationships and enhances engagement levels (Kumar & Rajini, 2024).

The literature (e.g., Dickson & Isaiah, 2024; Mosquera & Soares, 2025; Walker-Schmidt et al., 2022) has increasingly emphasised that interpersonal connections and engagement act as mechanisms that strengthen the effects of onboarding on talent retention. Interpersonal connections, defined as the social and relational bonds formed within organisations, support emotional adaptation, facilitate access to resources, and reinforce the sense of belonging (Li et al., 2023; Mondo et al., 2022).

Simultaneously, engagement – conceptualised as a positive psychological state of vigour, dedication, and absorption in work activities (Schaufeli et al., 2002) – has been identified as a key determinant of employee retention (Saks, 2022). Employees who experience high levels of engagement are more likely to persist in facing organisational challenges, align with corporate goals, and demonstrate greater loyalty to their employer (Schaufeli, 2021; Klein et al., 2019).

This research is situated within this thematic framework and aims to analyse the impact of the onboarding process on talent retention, considering the mediating role of interpersonal connections and employee engagement. The study is particularly relevant for supporting organisations in designing onboarding strategies that foster early integration, engagement, and long-term retention of employees.

Theoretical contributions beyond previous research

Although prior studies have established the influence of onboarding on engagement and retention individually, this research advances existing knowledge by integrating both interpersonal connections and engagement into a single sequential mediation model. This approach provides a more nuanced understanding of the relational and motivational dynamics that unfold during the onboarding process.

Specifically, this study addresses a gap in the literature by: (a) demonstrating that interpersonal connections serve as a primary mechanism through which onboarding enhances engagement; (b) establishing that engagement acts not merely as a parallel mediator but as a subsequent outcome reinforced by the quality of interpersonal relationships; and (c) offering empirical validation for a serial mediation structure, which has been theoretically suggested but seldom tested in previous onboarding research.

By articulating the sequential interplay between relational bonds and motivational states, this research proposes a more comprehensive model of how onboarding practices contribute to talent retention. Thus, it moves beyond prior fragmented approaches and supports a more holistic theoretical framework linking organisational socialisation, employee engagement, and retention.

1. Literature review

1.1. The onboarding process as a determinant of talent retention

Onboarding is a systematic and strategic process aimed at integrating new employees into the organisation by developing the skills, knowledge, and behaviours required for the effective performance of their roles (Caldwell & Peters, 2018). A well-structured onboarding programme helps to reduce initial anxiety, promotes adaptation to the organisational context, and fosters work motivation (Fu et al., 2023). In this regard, Kumar and Rajini (2024) emphasise that an effective onboarding process ensures swift access to the information, resources, and tools necessary for job performance. This approach contributes to optimising the learning process and promotes faster and more effective integration into the team (Chopra et al., 2024).

According to Bell (2021), the clear definition of roles and expectations is crucial for new employees to understand their contribution to the organisation and to perform their tasks effectively. Similarly, Narayansany and Isa (2021) stress that creating an inclusive work

environment from the outset is essential for employees to feel valued and integrated. Shore et al. (2018) also highlight that inclusive organisational practices promote employee well-being and engagement, strengthening their affective attachment to the organisation and, consequently, enhancing retention. This perspective is corroborated by Klein and Polin (2019), who demonstrate that consistent and well-designed onboarding programmes are associated with higher levels of organisational tenure, productivity, and performance.

Building on this idea, Ricks and Jaskolka (2022) state that employees who experience a positive integration process develop stronger emotional bonds with the organisation, which increases their motivation and intention to stay.

Recent studies, such as that by Dickson and Isaiah (2024), suggest that well-structured onboarding strategies foster engagement and reduce turnover intentions. These results reinforce the role of onboarding as a strategic tool for talent retention. Based on the reviewed literature, the following research hypothesis is proposed:

Hypothesis 1: *The onboarding process positively influences talent retention.*

1.2. Influence of the onboarding process on interpersonal connections and engagement

A well-structured onboarding process fosters the development of positive interpersonal relationships in the workplace (Narayansany & Isa, 2021). According to Dickson and Isaiah (2024), effective integration programmes provide opportunities for interaction between new employees, colleagues, and supervisors. This process facilitates the building of trust, support, and collaboration among team members and across different organisational departments (Chopra et al., 2024). Frögéli et al. (2023) highlight that socialisation should be considered a core component of onboarding programmes, whether through training activities, information sessions, or formal meetings that help create contexts of proximity and belonging.

Organisational socialisation can be understood as the process through which new employees learn the organisation's norms and values, enabling them to adjust their expectations accordingly (Godinho et al., 2023). Pinco et al. (2024) add that these moments of socialisation are crucial for adapting to the new context and for developing organisational engagement.

Narayansany and Isa (2021) underline the importance of feedback in the onboarding process, identifying a positive relationship between the support provided by colleagues and supervisors and the satisfaction and performance of new hires. In addition to facilitating the

learning process, continuous feedback helps new employees feel supported and clarifies any doubts they may have during the performance of their duties (Frögéli et al., 2023). Dickson and Isaiah (2024) emphasise that the earlier new employees establish positive relationships with their peers and supervisors, the greater their trust and proactivity in the medium and long term.

Frögéli et al. (2023) advocate the assignment of mentors as an effective strategy to facilitate organisational integration. Accompanied by experienced colleagues who embody the organisation's values and culture, new employees feel more secure and confident during the adaptation process (Ahmed, 2021). The relationship with the direct supervisor is also highly relevant, particularly in the early stages of integration, as it influences perceptions of support, fairness, and recognition (Aboramadan et al., 2021).

Engagement plays a central role in understanding the impact of onboarding. According to Schaufeli (2021) and more recently Mazzetti et al. (2023), this construct corresponds to a positive psychological state composed of three core dimensions: vigour, dedication, and absorption in work. Employees with high levels of engagement demonstrate enthusiasm, resilience, and deep involvement in their tasks, leading to enhanced performance and productivity (Lai et al., 2020). Memon et al. (2021) suggest that employees who feel integrated, accompanied, and supported tend to display higher motivation, loyalty, and organisational commitment.

Building on this evidence, it is important to theoretically substantiate the sequence proposed between interpersonal connections and engagement. The sequence whereby interpersonal connections precede engagement is grounded in organisational socialisation theory and social exchange theory. According to Gregory et al. (2021), newcomers form affective bonds with colleagues and supervisors as a result of the socialisation process, which provides the emotional security necessary for later cognitive and motivational engagement. These interpersonal connections act as a primary source of social support, facilitating adaptation, clarifying expectations, and fostering a sense of belonging (Frögéli et al., 2023; Godinho et al., 2023). In line with the tenets of social exchange theory (Blau, 1964), positive social interactions promote reciprocity, trust, and obligation, which subsequently evolve into greater psychological involvement in organisational goals (Schaufeli, 2021). Therefore, interpersonal ties are conceptualised as the antecedent mechanisms that activate and strengthen employee engagement during the onboarding process. This theoretical sequence supports the

proposed serial mediation model, where interpersonal connections developed during onboarding precede and predict subsequent engagement levels.

Hypothesis 2: *The onboarding process positively influences the development of interpersonal ties with colleagues and direct supervisors (H2a) and engagement (H2b).*

1.3. Relationship between interpersonal connections, engagement, and talent retention

The literature has highlighted that interpersonal connections and engagement play a mediating role in the relationship between the onboarding process and talent retention (Kaushal & Vashisht, 2022). According to Yu et al. (2023), effective employee integration fosters engagement, which in turn results in reduced turnover rates. Integration represents a significant transformation for both the newly hired employee and the organisation (Cesário & Chambel, 2019). When new employees perceive support from colleagues and direct supervisors, they tend to feel more valued and motivated, which increases their intention to remain (Dickson & Isaiah, 2023). According to Hossain et al. (2024), perceived organisational support, particularly from direct supervisors, is a key factor in building loyalty and engagement.

The quality of interpersonal relationships is fundamental for retaining top talent (Sylejmani & Meško, 2024). Organisations that promote these practices are able to generate stronger emotional bonds with employees, contributing to higher retention rates (Suherman & Arminarahmah, 2024). Conversely, employees working in less relational environments or within rigid hierarchical structures show a greater intention to leave the organisation (Obeng & Atan, 2024).

A sense of belonging and positive interpersonal relationships significantly contribute to employee well-being and retention (Robinson & Goldsmith, 2023). According to Dickson and Isaiah (2024), employees who develop affective bonds with their colleagues and feel part of a professional community demonstrate stronger commitment to organisational goals. These bonds act as sources of emotional and instrumental support, which are essential for facing the challenges of the adaptation process and strengthening organisational attachment (Pinco et al., 2024). In this framework, engagement does not emerge as an isolated phenomenon, but rather as a dynamic process closely linked to the quality of interpersonal relationships within the organisation.

According to Bakker and Van Wingerden (2021), employee engagement in the workplace depends not only on individual factors but also on the quality of interactions with supervisors and colleagues (Ngozi & Edwinah, 2022). Organisational environments that foster positive relationships, continuous feedback, and recognition tend to generate higher levels of engagement and increase the likelihood of long-term retention (Robinson & Goldsmith, 2023). These findings underscore the importance of simultaneously considering relational and motivational dimensions when seeking to understand talent retention (Gregory et al., 2021).

Engagement thus emerges as a key indicator of talent retention (Schaufeli et al., 2019). Employees with high levels of engagement develop an emotional bond with the organisation, which translates into a stronger sense of belonging and stability (Škerháková et al., 2022). Conversely, lower levels of engagement are associated with reduced satisfaction and a higher propensity to leave the organisation (Zhou & Chen, 2021). In this respect, Obeng and Atan (2024) concluded that employees with high engagement levels feel more involved in their work, demonstrate greater satisfaction and performance, and are more likely to remain within the organisation. These findings reinforce the importance of promoting organisational environments based on positive relationships and the appreciation of human capital (Liu et al., 2025).

The studies presented throughout the literature review support the formulation of the following research hypothesis:

Hypothesis 3: *Interpersonal connections with colleagues and direct supervisors (H3a) and engagement (H3b) positively influence talent retention.*

1.4. Serial mediation model

Interpersonal connections developed with colleagues and direct supervisors play a mediating role in the relationship between the onboarding process and talent retention (Carpenter, 2023). A well-implemented onboarding programme enables new employees to develop positive interpersonal relationships, contributing to a more welcoming and collaborative work environment (Dickson & Isaiah, 2024). According to Mosquera and Soares (2025), the bonds established during the onboarding phase influence employees' attitudes and behaviours over time, which is reflected in their levels of engagement and their intention to remain within the organisation. When employees feel supported and perceive that the

organisation cares about their needs and expectations, they are more committed to performing their tasks (Ulibrk et al., 2018).

The development of close relationships with peers facilitates knowledge sharing, provides emotional support, and contributes to the creation of a positive organisational climate (Frögéli et al., 2023). In turn, close relationships with supervisors are associated with greater emotional and behavioural involvement, which enhances engagement and reduces the propensity to leave the organisation (Che et al., 2023). These bonds favour talent retention by leading employees to perceive the organisation as an integral part of their professional support and development network (Paulus, 2023).

Establishing interpersonal relationships during the integration process facilitates adaptation and alignment with the organisational culture (Frögéli et al., 2023). When newcomers feel welcomed, they develop a sense of belonging, which strengthens their commitment to the team and the organisation (Dickson & Isaiah, 2024).

Engagement is strongly associated with job satisfaction, employee motivation, and well-being, and is recognised as one of the main predictors of talent retention (Saks, 2022). Organisations that invest in creating conditions favourable to engagement tend to build more stable, productive, and resilient teams. According to Schaufeli (2021), engagement strengthens employees' attachment to the organisation. Carpenter (2023) further highlights that individuals who experience an effective onboarding programme report higher levels of engagement and stronger relationships with colleagues and supervisors, which translates into a greater intention to stay within the organisation. In light of the above, the following research hypothesis was formulated:

Hypothesis 4: *Interpersonal connections with colleagues and direct supervisors, together with engagement, act as sequential mediators in the relationship between the onboarding process and talent retention.*

2. Method

This cross-sectional study adopted a quantitative approach with the aim of examining the relationships between variables and validating the proposed hypotheses. Data were collected through a questionnaire administered to a convenience sample. This type of sampling is considered appropriate when mediating effects are expected to occur immediately or within a short period (Kesmodel, 2018).

2.1. Sample

A total of 280 salaried employees participated in the study, of whom 50.7% were male (Table 1). Participants' ages ranged from 18 to 66 years ($M = 36.66$; $SD = 13.32$). The sociodemographic characteristics of the participants are detailed in Table 1.

Table 1

Sample characterisation

Sociodemographic variables	n (%)
Gender	
Male	142 (50.7%)
Female	138 (49.3%)
Age group ($M = 36.80$; $SD = 13.41$)	
24 years or younger	92 (32.9%)
Between 25 and 44 years	93 (33.2%)
45 years or older	95 (33.9%)
Educational qualifications	
Below bachelor's degree	71 (25.4%)
Bachelor's degree	111 (39.6%)
Above bachelor's degree	98 (35.0%)
Job role	
Operational	45 (16.1%)
Administrative	52 (18.6%)
Technical	116 (41.4%)
Managerial	67 (23.9%)
Organisational tenure ($M = 9.00$; $DP = 10.23$)	
1 year or less	75 (26.8%)
Between 2 and 5 years	84 (30.0%)
Between 6 and 14 years	55 (19.6%)
15 years or more	66 (23.6%)

Source: Author's own work

2.2. Measures

Employee Retention. To measure employees' intentions to remain in the organisation, the four-item scale developed by Salman and Ahmada (2014) was used (e.g., *I intend to stay with this organisation till retirement*). The scale demonstrated satisfactory internal consistency ($\alpha = 0.71$).

Onboarding. The onboarding process was measured using the five-item scale developed by Sharma and Stol (2020), which assesses how newly hired employees are welcomed and integrated into the organisation (e.g., *I can say I am socially integrated in my workplace*). The

internal consistency of the scale was examined using Cronbach's alpha coefficient, which showed acceptable reliability ($\alpha = 0.72$).

Utrecht Work Engagement Scale (UWES-9). Engagement was assessed using the short version of the Utrecht Work Engagement Scale (UWES), developed by Schaufeli and Bakker (2003) and validated by Balducci et al. (2010). The scale includes items that measure vigour (e.g., *At my work, I feel strong and vigorous*), dedication (e.g., *I am enthusiastic about my job*), and absorption (e.g., *I am immersed in my job*). In this study, engagement was treated as a unidimensional construct, without distinguishing between the three dimensions. Consistent with the original validation study, Cronbach's alpha coefficients indicated high internal consistency, ranging from 0.92 to 0.94.

Interpersonal connections. Relationships with colleagues and direct supervisors were measured using the five-item scale developed by Vilayil (2021), based on the work of Gupta et al. (2018) (e.g., *My supervisor quickly integrated me into the team*). The scale demonstrated adequate reliability, both in the present study and in the original research, with Cronbach's alpha coefficients ranging from 0.77 to 0.88.

Control Variables. Age and gender were used as control variables. According to Hayat et al. (2022), more experienced professionals tend to value job stability and develop a stronger sense of organisational commitment, as they have already established a relationship of trust. Moreover, it has been observed that, in general, women are more sensitive to work flexibility and work-life balance, and when these aspects are not ensured, their likelihood of leaving the organisation is higher than that of men (Tripathi & Sankaran, 2021).

2.3. Procedure

Data were collected online through questionnaire surveys. The survey link was distributed via email using the researchers' professional contacts. The email included a brief description of the study, information on informed consent, and a statement ensuring anonymity and data confidentiality. Statistical analysis was conducted using SPSS and AMOS software (version 29).

2.4. Statistical analysis

Multivariate normality was assessed using Mardia's coefficient (Mardia, 1980). This method enabled the determination of skewness and kurtosis coefficients, along with the

statistical significance (p-value). The results indicated that the data met the assumptions of multivariate normality (Mardia_skewness = 7.382, $p = 0.154$; Mardia_kurtosis = 5.171, $p = 0.793$), as Mardia's standardised coefficient exceeded the 5% threshold ($p > 0.05$; Hossain et al., 2022; Mardia et al., 2024). Furthermore, the skewness coefficients (ranging from -0.47 to 0.01) and kurtosis coefficients (ranging from -0.93 to 0.31) for all variables fell within the acceptable range of $[-1.5; 1.5]$, supporting the suitability of structural equation modelling (Lam & Zhou, 2020).

Although the main objective of this study was to test the mediation model, it was considered appropriate to conduct Harman's single-factor test, including all items (Kock et al., 2021). The analysis revealed a one-factor solution explaining 41.6% of the total variance, which indicates that the results were not affected by Common Method Bias.

Convergent validity analysis showed that the Average Variance Extracted (AVE) was greater than 0.50, and Composite Reliability (CR) values exceeded 0.70, in accordance with the criteria proposed by Cheung et al. (2024). Additionally, it was verified that the Maximum Shared Variance (MSV) remained below the AVE, as recommended by Acar et al. (2023), reinforcing the evidence of discriminant validity.

Finally, with the exception of age and gender, all constructs showed statistically significant correlations, as detailed in Table 2. These results indicate that the sociodemographic variables of age and gender do not influence the effects of the onboarding process, interpersonal connections, or engagement on talent retention.

Table 2

Descriptive statistics, reliability, validity and intercorrelations of the study variables

Variable	M	SD	CR	AVE	MSV	1	2	3	4
1. Talent retention	3.21 ¹	1.08	0.85	0.81	0.47	(0.71)			
2. Onboarding process	3.89 ¹	0.62	0.79	0.65	0.31	0.334**	(0.72)		
3. Engagement	3.43 ¹	0.93	0.95	0.83	0.28	0.582**	0.538**	(0.94)	
4. Interpersonal connections	3.81 ¹	0.79	0.90	0.84	0.29	0.487**	0.484**	0.406**	(0.88)
Age	36.80	13.41	-	-	-	0.181	0.023	0.198	-0.281
Sex	-	-	-	-	-	-0.050	0.075	-0.024	-0.021

Note: $N = 280$; ** $p < 0.001$; M = Mean; SD = Standard-deviation; CR = Composite Reliability; AVE = Average Variance Extracted; MSV = Maximum Shared Variance

¹Scale ranging from 1 to 7; Values in parentheses are Cronbach's alpha coefficients; Correlations are based on standardized scores

²Sex codes: 0 = female; 1 = male

Source: Author's own work

A confirmatory factor analysis (CFA) was subsequently conducted to assess whether the observed variables adequately represent the latent factors underlying the behaviour of the measured constructs (Alavi et al., 2020). The results showed that, after covarying the error terms indicated by AMOS modification indices, the model demonstrated a satisfactory fit to the data (Alavi et al., 2020). The results showed that, after covarying the error terms indicated by AMOS modification indices, the model demonstrated a satisfactory fit to the data [$\chi^2_{(175)} = 3.15$, $p < 0.001$, CFI = 0.90, TLI = 0.89; SRMR = 0.06, RMSEA = 0.07, LO90 = 0.08, HI90 = 0.09]. Following this, the research hypotheses were tested in accordance with the proposed model.

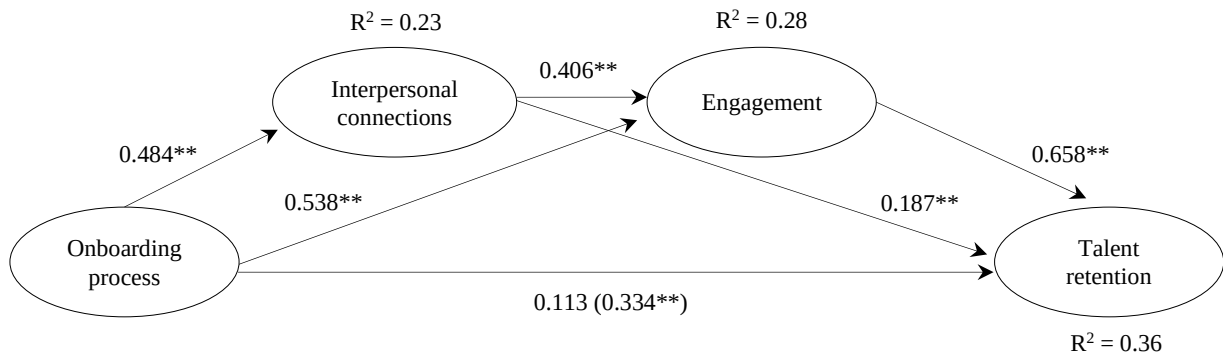
3. Results

Structural equation modelling (SEM) with maximum likelihood estimation was used to test whether the relationship between the onboarding process and talent retention was mediated by interpersonal connections and engagement. The serial mediation model demonstrated an acceptable fit to the data [$\chi^2_{(174)} = 2.79$, $p < 0.001$, CFI = 0.91, TLI = 0.90; SRMR = 0.07, RMSEA = 0.08, LO90 = 0.07, HI90 = 0.08]. As illustrated in Figure 1, the onboarding process had a positive influence on talent retention, thus supporting Hypothesis 1. Linear regression results revealed a direct and statistically significant relationship between the predictor and the outcome variable ($\beta = 0.334$, $t = 5.918$, $p < 0.001$). The coefficients indicate that the more structured and effective the onboarding process is, the greater the likelihood of retaining talent within the organisation. The onboarding process also had a significantly positive effect on interpersonal connections ($\beta = 0.484$, $t = 9.211$, $p < 0.001$) and engagement ($\beta = 0.538$, $t = 10.651$, $p < 0.001$), thus supporting Hypothesis 2.

Moreover, the interpersonal ties developed with colleagues and direct supervisors had a positive effect on engagement ($\beta = 0.406$, $t = 7.403$, $p < 0.001$), and both variables had significant effects on talent retention, thereby validating Hypothesis 3. When controlling for the effects of interpersonal connections and engagement, the direct effect of onboarding on talent retention was no longer significant, decreasing from $\beta = 0.334$, $p < 0.001$ to $\beta = 0.113$, $p = 0.062$.

Figure 1

Sequential mediation model of interpersonal connections and engagement in the relationship between onboarding and talent retention



Notes: Only the latent variables are presented in this figure. The total effect of the onboarding process on talent retention was shown in parentheses. $^{**}p < 0.001$

Source: Author's own work

To separately analyse the indirect effects of interpersonal connections and engagement, Model 6 of the PROCESS macro by Hayes (2018) was used. The results indicated that both interpersonal connections ($B = 0.242$, $SE = 0.067$, 95% CI $[0.109, 0.375]$) and engagement ($B = 0.280$, $SE = 0.055$, 95% CI $[0.171, 0.390]$) played a mediating role in the relationship between the onboarding process and talent retention. In addition, a sequential mediation effect was identified, whereby onboarding positively influenced talent retention through interpersonal connections and engagement ($B = 0.563$, $SE = 0.089$, 95% CI $[0.390, 0.741]$, $p < 0.001$). Therefore, Hypothesis 4 was supported by the data.

Furthermore, the three indirect effects were compared to assess whether they exerted similar influences on the relationship between the onboarding process and talent retention (Table 3). The analysis revealed that the indirect effect of onboarding on talent retention through interpersonal connections was the strongest ($B = 0.660$, $SE = 0.083$, 95% CI $[0.503, 0.833]$), followed by the indirect effect via engagement, which was lower than the effect of sequential mediation ($B = 0.376$, $SE = 0.090$, 95% CI $[0.210, 0.569]$).

Table 3

Comparison of the indirect effects of the onboarding process on talent retention: mediation by interpersonal connections, engagement, and sequential mediation

Effects	Bootstrapping CI			
	B	SE	Lower	Upper
<i>Total indirect effect</i>				
Model 1: Onboarding process → Interpersonal connections → Talent retention	0.186	0.051	0.295	0.090
Model 2: Onboarding process → Engagement → Talent retention	0.473	0.074	0.337	0.629
Model 3: Onboarding process → Interpersonal connections → Engagement → Talent retention	0.097	0.038	0.026	0.177
<i>Contrasts</i>				
Model 1 versus Model 2	0.660	0.083	0.503	0.833
Model 1 versus Model 3	0.284	0.070	0.252	0.428
Model 2 versus Model 3	0.376	0.090	0.210	0.569

Note: B = Unstandardized beta; SE = Standard error; CI = Confidence intervals; Bootstrapping confidence intervals based on 5.000

Source. Author's own work

This findings was confirmed that an effective onboarding process strengthens interpersonal relationships, which in turn enhances employee engagement and contributes to their intention to remain within the organisation.

4. Discussion

This study analysed the relationship between the onboarding process and talent retention, considering the mediating role of interpersonal connections and engagement. The following discussion interprets the results obtained and integrates them with the theoretical and empirical evidence previously reviewed.

The data confirmed a direct and statistically significant relationship between the onboarding process and talent retention, supporting Hypothesis 1. These results align with the findings of Klein and Polin (2019), who identify onboarding as a key strategic mechanism for ensuring employees remain within organisations. The positive influence between these two variables suggests that the more structured, intentional, and effective the onboarding process is, the greater the likelihood of employee retention in the medium to long term. Similarly, Caldwell and Peters (2018) argue that onboarding is a systematic process aimed at developing the competencies and behaviours that help align individual goals with those of the organisation.

Manhal (2024) reinforces this view, stating that onboarding represents a central dimension of strategic human resource management, as it affects employee performance and retention. Chopra et al. (2024) further emphasise that effective onboarding contributes to clarifying expectations, accelerating learning, and enhancing newcomers' confidence. In the same line, Dickson and Isaiah (2024) highlight that inclusive practices and integration-friendly environments promote employee appreciation and strengthen affective bonds with the organisation. These dynamics contribute to employees' organisational attachment and support their long-term retention.

The onboarding process strengthened interpersonal connections (H2a) and increased engagement levels (H2b), confirming Hypothesis 2. These results are consistent with the work of Narayansany and Isa (2021), who stress the importance of formal and structured integration to foster interpersonal relationships and boost engagement. Dickson and Isaiah (2024) also point out that onboarding programmes facilitate direct interaction between new employees, colleagues, and supervisors. This interaction supports the development of trust-based relationships, which are essential for team cohesion and a sense of belonging. Chopra et al. (2024) highlight that onboarding serves as a strategic opportunity to stimulate interdepartmental communication and mutual support. The present study's findings are also supported by Frögéli et al. (2023), who show that support provided by mentors and/or direct supervisors enhances learning effectiveness and strengthens interpersonal ties. The positive link between onboarding and engagement confirms the assumption that employees who feel supported, valued, and integrated tend to demonstrate greater organisational involvement, as noted by Memon et al. (2021). The results highlight the relevance of interpersonal connections and engagement as relational and motivational variables enhanced by well-designed integration processes. This relationship reinforces the importance of onboarding practices that promote both the transfer of information and the development of meaningful relationships, thereby fostering cohesive, participatory, and motivating environments (Mazzetti et al., 2023).

The findings also validated Hypothesis 3, demonstrating that interpersonal connections (H3a) and engagement (H3b) mediate the relationship between the onboarding process and talent retention. Evidence showed that interpersonal ties with colleagues and supervisors positively affect engagement, and that both variables increase employees' intention to stay—findings that are consistent with the research conducted by Kaushal and Vashisht (2022). When controlling for the mediating variables, the direct effect of onboarding on retention was no

longer significant, confirming the existence of full mediation. These results differ from those of Manhal (2024), who reported a direct effect of onboarding on talent retention. However, the study by Yu et al. (2023) supports the present findings, showing that effective integration boosts engagement and reduces turnover rates. The importance of interpersonal connections was also highlighted by Sylejmani and Meško (2024), who demonstrated that the quality of interpersonal relationships is critical to retaining top talent. This perspective is shared by Suherman and Arminarahmah (2024), who concluded that organisations fostering collaborative and empathetic environments create stronger emotional bonds with employees. Pinco et al. (2024) likewise argue that emotional support facilitates the adaptation process and strengthens the employee–organisation bond. The present findings are also consistent with Schaufeli et al. (2019) and Škerháková et al. (2022), who describe engagement as a key predictor of talent retention. This is further reinforced by Obeng and Atan (2024), who link high engagement with greater satisfaction and intention to remain.

The analysis confirmed that interpersonal connections and engagement act as sequential mediators in the relationship between the onboarding process and talent retention, thereby supporting Hypothesis 4. This evidence reinforces the importance of integration programmes that go beyond the transmission of information, as the development of meaningful relationships and emotional involvement are essential for employees to feel part of the organisation. Similar conclusions were drawn by Li et al. (2023), who argue that interpersonal connections formed during onboarding are crucial for newcomers' adaptation. Robinson and Goldsmith (2023) further note that well-designed onboarding programmes promote interpersonal connections and foster a sense of belonging, which is a direct antecedent of engagement. The quality of interpersonal relationships early in the employment experience has a lasting influence on employee behaviour and motivation (Dickson & Isaiah, 2024). This sequential mediation is in line with the contributions of Ulibrk et al. (2018), who highlight the role of social support in increasing dedication and energy invested in professional tasks. Similarly, Che et al. (2023) emphasise that close relationships with supervisors are associated with greater emotional involvement and lower turnover intentions. In the same direction, Frögéli et al. (2023) show that the quality of early-stage interactions facilitates alignment with organisational values, which—combined with a structured onboarding process—supports the development of affective bonds and commitment. This commitment is intensified through engagement, which acts as a motivational mechanism, as described by Carpenter (2023). The interaction between

interpersonal connections and engagement, as sequential mediators, offers a deeper understanding of the mechanisms underlying talent retention, in line with the findings of Suherman and Arminarahmah (2024).

4.1. Theoretical and practical contributions

This study offers significant contributions to both theory and practice in the field of human resource management, with a particular focus on talent retention through effective onboarding processes.

From a theoretical perspective, the research deepens the understanding of the mechanisms through which onboarding influences talent retention. Additionally, it integrates interpersonal connections and engagement into a single sequential mediation model. In doing so, it addresses gaps identified in the recent literature (e.g., Mosquera & Soares, 2025; Che et al., 2023), which highlight the need to better understand the relational and motivational processes that occur during the early stages of integration. The results confirm that the impact of onboarding is not unidimensional but arises from a chain of effects that strengthens employees' emotional attachment to the organisation. This study calls for a more holistic view of organisational socialisation and extends the theoretical framework on retention, engagement, and interpersonal bonding in organisational contexts.

In practical terms, the study reinforces the importance of implementing structured onboarding programmes with clear objectives and actions aimed at fostering social ties and reinforcing a sense of belonging. Examples of such initiatives include the assignment of formal mentors, welcome sessions with supervisors, team integration activities, systematic follow-up during the first months, and continuous feedback. These practices help to build trust and enhance engagement among new hires. By providing a positive experience from the outset, organisations foster identification with organisational culture and strengthen employee commitment.

These insights are particularly relevant in a context marked by increased labour mobility and a shortage of qualified talent. Organisations that invest in effective onboarding processes are better positioned to attract, retain, and develop professionals aligned with their values and strategic goals. Ultimately, well-designed onboarding leads to more stable, motivated, and productive teams, with a direct impact on organisational sustainability. Therefore, this research contributes meaningfully to the ongoing reflection on the strategic role of onboarding in people

management. Talent retention should be seen as a dynamic and multifactorial process that begins during the initial onboarding phase and is consolidated through interpersonal relationships and emotional engagement.

4.2. Limitations and suggestions for future research

Despite the theoretical and practical contributions achieved, this study presents some limitations that should be considered when interpreting the results and defining future research directions.

Firstly, this is a cross-sectional study, with data collected at a single point in time. This design limits the ability to infer causal relationships and prevents the observation of how effects unfold over time. In particular, although the theoretical model posits that interpersonal connections lead to engagement, it is possible that a reverse causality mechanism may occur, whereby more engaged employees are also more likely to form and maintain stronger interpersonal bonds. Longitudinal studies would allow for a more robust test of the causal sequence proposed, by tracking changes in interpersonal connections and engagement over time.

Secondly, the study relied on a convenience sample, which, despite being adequate for exploratory research, limits the generalisability of the findings to the broader working population. Future research should employ probabilistic sampling methods to capture a more representative range of sectors, hierarchical levels, and organisational cultures.

Thirdly, omitted variable bias cannot be ruled out. Other organisational variables, such as organisational culture, leadership style, and team climate, might influence both interpersonal connections and engagement. Future studies could include these contextual variables as controls or moderators to better isolate the specific effects of the onboarding process.

Additionally, the study did not explore the influence of different work arrangements (e.g., face-to-face, hybrid, or fully remote work) on the development of interpersonal connections during onboarding. Emerging work models pose challenges to social integration and engagement, and future research could explore how onboarding practices can be adapted to different working environments.

Finally, incorporating mixed-method approaches, combining quantitative surveys with qualitative interviews, could enrich the understanding of employees' subjective experiences

during onboarding and provide deeper insights into the relational and motivational mechanisms identified.

In addition to these directions, future research could adopt experimental or quasi-experimental designs to rigorously test the causal effects of onboarding interventions on interpersonal connections, engagement, and talent retention. Such approaches would provide stronger evidence for the effectiveness of structured onboarding programmes. Furthermore, it would be valuable to explore moderated mediation models, examining whether individual characteristics such as proactive personality, openness to experience, or psychological capital moderate the strength of the relationships identified. For example, it is plausible that more proactive employees are better able to build interpersonal connections during onboarding, thereby experiencing higher engagement levels and greater retention intentions. Testing these moderated mechanisms would provide a deeper and more differentiated understanding of the processes underpinning successful employee integration and retention.

Conclusion

Based on a sequential mediation model, this study analysed the impact of the onboarding process on talent retention by exploring the indirect effects of interpersonal connections and engagement. Starting from the premise that employee integration represents a critical stage in the organisational life cycle, the research aimed to understand how structured onboarding practices influence the attitudes and behaviours of newly hired employees, particularly in relation to their intention to remain within the organisation.

The results validated all four hypotheses, showing that the onboarding process has a positive influence on talent retention—both directly and indirectly—through the mediation of interpersonal connections and engagement. In addition, a sequential mediating effect was identified, whereby the formation of relationships with colleagues and direct supervisors increases engagement, which in turn contributes to talent retention. The findings suggest that the most effective onboarding programmes are those that go beyond information transfer and skills development, promoting the formation of interpersonal relationships based on trust. Interpersonal connections and engagement therefore emerge as central mechanisms in explaining the effects of onboarding and should be integrated into people management strategies.

These findings make it clear that investing in a strategically designed onboarding process is essential to foster a sense of belonging, strengthen organisational commitment, and retain qualified professionals. The adoption of practices that promote the development of positive relationships and employee involvement from the very first point of contact with the organisation constitutes a competitive advantage in today's labour market.

The model adopted in this study adds value by demonstrating that the effects of onboarding on retention are neither direct nor automatic, but rather mediated by relational and motivational dynamics. This perspective allows for a deeper understanding of the mechanisms through which employees connect with the organisation and make the decision to stay. It follows that onboarding programmes should be designed with a holistic approach—one that combines clear communication of expectations with intentional strategies to foster interpersonal relationships and engagement. The assignment of mentors, the promotion of continuous feedback, encouragement of socialisation, and recognition of the role of direct supervisors are examples of practices that can be integrated into onboarding processes to strengthen employees' emotional attachment to the organisation and, ultimately, support their long-term retention.

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Appendix 1 - Statement from the Ethics Committee of ISG/CIGEST



Ethics Commission ISG / CIGEST

Reference: CIG_0010.13/2025

Date: May 6, 2025

Requested by: Professor Rosa Rodrigues

Title: "The invisible bond: Exploring the sequential mediation of interpersonal connections and engagement in the relationship between the onboarding process and talent retention"

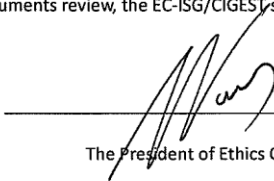
Authors: Rosa Isabel Rodrigues and Beatriz Tomás do Monte Costa

The Ethics Committee of Instituto Superior de Gestão / CIGEST reviewed your application to obtain ethical assessment for your manuscript. Documents were analysed by professor Miguel Varela, Professor Ricardo Ferro and Professor Mariana Marques.

The commission has reviewed the manuscript and the applied questionnaire, validating that anonymity and confidentiality have been assured. Also, the commission notices that an informed consent was presented to the participants.

None of the researchers participating in this study took part in the decision making and voting procedure for this assessment.

Based on the documents review, the EC-ISG/CIGEST states a favorable ethical opinion about the request.



The President of Ethics Commission ISG / CIGEST

Ethics Commission ISG / CIGEST, Rua Professor Reinaldo dos Santos, nº 46 A, 1500-552 Lisboa (Benfica)

Appendix 2 - Official confirmation of manuscript submission to Administrative Sciences

-----Mensagem original-----

De: susy@mdpi.com <susy@mdpi.com> Em Nome De Administrative Sciences Editorial Office

Enviada: 1 de junho de 2025 11:16

Para: Rosa Isabel Rodrigues <rosa.rodrigues@isg.pt>

Cc: Administrative Sciences Editorial Office <admsci@mdpi.com>

Assunto: [Administrative Sciences] Manuscript ID: admsci-3705979 - Submission Received - Available Discount Vouchers

Dear Professor Rodrigues,

Thank you for submitting the following manuscript for publication in Administrative Sciences:

Manuscript ID: admsci-3705979

Type of manuscript: Article

Title: The invisible bond: Exploring the sequential mediation of interpersonal connections and engagement in the relationship between the onboarding process and talent retention

Authors: Beatriz Costa, Rosa Isabel Rodrigues *

Received: 1 Jun 2025

E-mails: 22300268@alunos.isg.pt, rosa.rodrigues@isg.pt Talent Management Strategies for Sustainable Employee Retention

https://www.mdpi.com/journal/admsci/special_issues/OBXLRJ82WB

Kind regards,

Administrative Sciences Editorial Office