
HR training practices and innovative work behaviour: a moderated mediation model

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Abstract: The present study aims to explore the relationship between HR training practices, proactivity, learning goal orientation and innovative behaviours in work contexts. It is hypothesised that proactivity plays a mediating role in the relationship between HR training practices and innovative behaviour and that learning goal orientation positively interacts with training practices, increasing the strength of the association with proactivity and innovative behaviour. Data were collected on a sample of 384 workers from 15 SMEs in central Italy. The results showed that HR training practices can facilitate innovative work behaviours partly through proactivity and that learning goal orientation moderates the relationship between HR training practices and innovative behaviours. Advancing from the existing studies, this article introduces a mechanism and a condition through which HR training practices influence innovative work behaviours, through the activation of proactivity processes and interacting with learning goal orientation.

Keywords: human resource management; HRM; training practices; learning goal orientation; LGO; proactivity; innovative work behaviour; IWB.

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1 Introduction

In the current socio-economic situation, characterised by uncertainty and rapid change, organisations are required to continually rethink themselves in order to respond adequately to daily challenges. Within this context, the ability to facilitate innovation at work is a key factor for organisational success and survival. Therefore, more and more companies are trying to facilitate the innovative processes within them (Janssen, 2000).

Innovation is the intentional introduction and application within a role, group or organisation of ideas, processes, products or procedures, new to the relevant adoption unit, designed to significantly improve the individual, the group, organisation and society (West and Farr, 1989). On the basis of this definition, a common operationalisation of innovation at the individual level is the innovative work behaviour (IWB), that is to say a set of direct individual behaviours generating promotion and intentional implementation of ideas, processes, products or new and useful procedures within a role, group or organisation (de Jong and den Hartog, 2010). IWB has been proven to be relevant to many organisational outcomes, such as the development of new products, services and procedures, individual and organisational effectiveness and job satisfaction (Janssen et al., 2004; Yuan and Woodman, 2010). Despite this evidence, studies on innovation have focused mainly on the organisational level, often omitting to investigate how innovation can be promoted through workers' behaviours (Tharenou et al., 2007; Smith et al., 2012). Nevertheless, the individual level is central to the entire innovation process. In fact, each innovative process is activated starting from the creative thoughts and behaviours of individuals who can subsequently develop and promote innovation at other levels only successively (Appu and Sia, 2017; Foss et al., 2013).

Workers' innovative efforts can be facilitated by three specific characteristics, task-related, creative skills and intrinsic motivation (Amabile, 1996; Amabile and Pratt, 2016). Human resource management practices (HRM) training are particularly important in these areas because they concern both the acquisition of knowledge and task motivation (He et al., 2018; Jiang et al., 2012).

Recently, the growing interest in the value of human capital development has drawn attention to the relationship between HR training practices and various measures such as productivity (Barrett and O'Connell, 2001), safety and job trust (Boselie et al., 2000), financial performance (Glaveli and Karassavidou, 2011) and employee motivation (Boxall et al., 2011; Muñoz Castellanos and Salinero Martín, 2011). However, the relationship between HR training practices and innovation has been largely neglected (Chen and Huang, 2009) and only a few recent studies have attempted to fill this gap. Nevertheless, these studies have considered training as a component of HRM systems

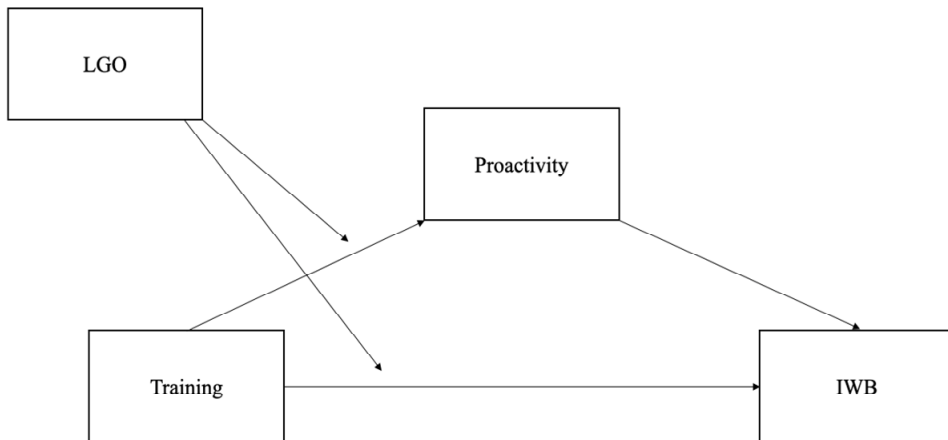
and not as a single variable (Bos-Nehles et al., 2017), consequently, the independent effect of training, as a distinct practice of HRM, on individual innovation has yet to be thoroughly investigated (Battistelli and Odoardi, 2016).

Furthermore, previous studies have mainly focused on the direct effects of HRM practices, although it is important to consider the mechanisms by which HRM practices affect individual behaviour. This has led to a lack of clarity on the possible processes capable of explaining the relationship between HRM practices and IWB (Slagter, 2009).

Proactivity represents a belief in the ability to overcome changes in the environment (Bateman and Crant, 1993). More specifically, Crant (2000) described it as connected to “taking initiatives to improve current circumstances or create new ones; it implies challenging the status quo rather than passively adapting to current conditions” (p.436). Additionally, proactivity is characterised by self-initiated and change-oriented actions (Bindl and Parker, 2010; Grant and Ashford, 2008).

Several studies have indicated both that HR systems, including training practices, are able to promote proactivity in workers (Lee et al., 2016), and that proactivity is an important antecedent for innovative behaviour (Kim et al., 2018). Therefore, it is possible to argue that the perception of training practices can play a role in individual innovation indirectly through proactivity. This study suggests that providing learning opportunities, through training, influences employee proactivity, in fact, training activities can determine the development of employees’ ability to seek opportunities and increase their confidence in the demonstration of initiative, and consequently facilitating innovative behaviours (Bateman and Crant, 1993).

Figure 1 Hypothesised model



Further, this study proposes the existence of an interaction effect between training practices and learning goal orientation (LGO). LGO represents “an individual’s desire to develop himself by acquiring new skills, mastering new situations and improving his own skills” (Vandewalle et al., 2001, p. 165). Studies have shown a main effect of LGO on creativity (Hirst et al., 2009), it is also positively associated with innovative performance (Lu et al., 2012). So, it is assumed that LGO acts as a moderator interacting with training, in fact perception training practices can determine greater results in terms of learning in individuals characterised by high levels of LGO, thus maximising the effects on individual proactivity and innovation.

In sum, the present study attempts to contribute to the literature in several ways: first, by examining the role of HR training practices in enhancing individual innovation; second, by investigating how proactive personality mediates the relationship between HR training practices and IWB; third, by exploring the moderating role of LGO on the relationship between HR training practices and both proactivity and IWB. The proposed model is summarised in Figure 1.

2 Theory and hypothesis

2.1 HR training practices

Although the importance of innovation is widely recognised by professionals and scholars, the promotion of innovative behaviour within work contexts still remains a challenging aspect (de Jong and den Hartog, 2010). Therefore, organisations are focusing on incorporating HR practices that can significantly stimulate innovative behaviour within them. The relevance of this aspect has led to a greater interest among scholars to increase understanding of the relationship between HR practices and IWB practices in recent years (Bos-Nehles and Veenendaal, 2019; Chen et al., 2018).

Training practices are a function of HRM aimed at improving work performance through training processes aimed at improving knowledge, skills and specific attitudes for work tasks (Noe et al., 2014). Numerous studies have shown that training improves work skills which, in turn, leads to better performance (Seeck and Diehl, 2017; Noe et al., 2014). Training also contributes to self-efficacy, job satisfaction and commitment (Wright and Kehoe, 2008). Based on the compositional theory of innovation (Amabile 1996; Amabile and Pratt, 2016) that identifies task-relevant skills and knowledge as crucial factors to facilitate innovative processes in the workplace, several studies have found a positive direct impact of training practices on IWB (e.g., Pratoom and Savatsomboon, 2012; Zhang and Begley, 2011). Nevertheless, only recently attention has been drawn to the subjective perception of HRM practices while previous studies typically relied on reports from managers or HR executives (Bowen and Ostroff, 2004).

Researchers stated the importance of focusing on how employees perceive training practices, rather than relying on organisational-level assessment (Bos-Nehles et al., 2017; Nishii et al., 2008). In fact, employees' experience of HR practices is a more solid perspective as it depends directly on the degree of their implementation in practice (Bowen and Ostroff, 2004; Colbert, 2004; Nishii et al., 2008).

Furthermore, the theory suggests that workers can have different perceptions and reactions to HRM practices (Nishii and Wright, 2008). Perceptions may vary in terms of expectations, values and work experience, because of these differences, workers perceive HRM practices in different ways (den Hartog et al., 2004). Employees' perception of HR practices "has a greater impact on their attitudes and behaviour than HRM practices themselves because people do not react to the real (objective) environment, but rather to their own perception (subjective)" (e.g., Guest, 1999; [Boon et al., (2014), p.22]). Consequently, in this study the training practices are measured through workers' individual perception.

The relationship between training practices and IWB can be explained by the theoretical framework of Amabile (1996) based on the importance of knowledge for innovation. This theory states that the ability to use existing knowledge and its

recombination facilitates innovation processes (Amabile et al., 2005) and training practices are aimed at the construction of work-related knowledge. Therefore, it is possible to hypothesise that the perception of training practices, improving knowledge, skills and working skills, can contribute to greater innovative behaviour among workers.

H1 HR training practices are positively related to IWB.

2.2 *Proactivity*

Unsworth and Parker (2003, p.177) define proactivity as “a set of self-directed, action-oriented behaviours aimed at changing the situation or oneself to achieve greater personal or organisational effectiveness”. In time, proactivity has had many different conceptualisations, depending on whether it was intended as a relatively stable trait or as a result that varies through situations, such as behaviour or a psychological state, and as an individual or organisational level construct (Tornau and Frese, 2013). In this study we adopt the approach that describes proactivity as a personal characteristic that can vary depending on the situation (Li et al., 2017).

Previous studies have commonly hypothesised that proactivity may generate positive environmental changes in the workplace (Li et al., 2014), but recent research is examining how contextual work-related factors can have an impact on changes in proactivity levels. Indeed, scholars have identified several contextual antecedents emerging from empirical studies, suggesting that workers can develop higher levels of proactivity when they have positive perceptions of the organisation (Grant and Sumanth, 2009). Furthermore, other factors have also been suggested as antecedents to proactivity, such as transformational leadership (Belschak and den Hartog, 2010; Rank et al., 2009), job characteristics (e.g., autonomy and job complexity) and the interpersonal climate (e.g., support and trust) (Parker et al., 2010, 2006; Raub and Liao, 2012). Based on these researches, this study hypothesises that perception of training practices can be associated with employees' proactivity, as training practices are able to facilitate employees' ability to seek opportunities and increase their confidence in demonstrating initiative, which are both key components of proactivity (Bateman and Crant, 1993).

There is plenty of evidence that proactivity can be considered an important predictor of innovative worker behaviour. For example, it has been shown that dispositional proactivity is positively associated with the generation of ideas (Kim et al., 2009). Another study showed that the proactive personality is positively related to constructive change (Bateman and Crant, 1993). Furthermore, Seibert et al. (2001) demonstrated that worker proactivity is correlated with supervisory innovation assessments.

At the theoretical level, these results can be explained by the idea that proactivity is positively related to motivation to take initiatives and to seek opportunities (Fuller and Marler, 2009). As a result, proactive employees will find original ideas more often and will be more motivated to ensure that these ideas are implemented. Moreover, given the perseverance of proactive people (Crant, 2000), proactive employees can be particularly effective in promoting their ideas and thus generating broad social support for them (Cangialosi et al., 2021; Swaab et al., 2007).

Consequently this study posits that HR training practices can contribute to greater levels of proactivity in workers, thanks to the increase of knowledge and skills, and consequent levels of confidence in their own resources for what concerns the search for

opportunities and for the implementation of personal initiatives, which in turn foster innovative behaviours.

H2 Proactivity mediates the relationship between training practices and IWB.

2.3 LGO

LGO represents individuals' desire to develop by acquiring new skills, mastering new situations and improving competence (Vandewalle et al., 2001). Thus, individuals with a high LGO aim at acquiring new skills and knowledge from work tasks.

This study hypothesises that LGO is a condition capable of maximising the effects of HR training practices on innovation and proactivity. In fact, training practices can have a greater effect on those employees who are strongly orientated towards learning or mastering new aspects, determining higher levels of knowledge, skills and abilities in them (Dweck, 1986) and consequently resulting in greater proactivity and innovation. Furthermore, an interaction between training practices and a strong orientation towards learning goals may facilitate proactivity and innovative behaviour of workers as it encourages employees to make an additional effort to acquire new knowledge and experiment with various solutions, which can lead to self-initiated actions oriented to change and formulation of new and useful ideas based on knowledge, skills and abilities acquired through training.

Specifically, empirical evidence has so far revealed that a strong orientation towards learning objectives can stimulate both workers' proactivity (Parker and Collins, 2010; Chughtai and Buckley, 2011) and innovative behaviour at work (Montani et al., 2014). In fact, people with a high learning orientation tend to be more proactive as a consequence of perceiving their work efforts as a useful opportunity for learning (Porath and Bateman, 2006). Furthermore, workers with a strong desire to learn can increase their knowledge and skills necessary for innovation (Amabile, 1996; Gong et al., 2009; Hirst et al., 2009) and at the same time decrease perceived threat of possible consequences of failure (Janssen and van Yperen, 2004; Vandewalle et al., 1999).

Consequently, following the same logical framework it is possible to hypothesise that workers characterised by high LGO will perceive HR training practices as an opportunity for learning and development in an even more relevant manner and consequently will be more driven to operate proactively in different work situations and to act more innovative behaviours.

H3a LGO positively moderates the relationship between HR training practices and proactivity.

H3b LGO positively moderates the relationship between HR training practices and IWB.

3 Methodology

3.1 Study design, participants and procedure

This study involved 384 workers from 15 small and medium-sized enterprises located in central Italy from various industrial sectors. The research was presented to employees through formal meetings organised by the owners of each company. Participation was

voluntary and anonymous, and all workers were informed of the research objective. A questionnaire was used to collect the data. It included scales validated by international literature and the translation-back-translation procedure (Brislin, 1980) was adopted as not all the measurements used were validated in Italian.

3.2 Measures

- *HR training practices*: Boselie et al. (2000) the 3-item scale was used to measure training opportunities. Examples of items are, 'I have enough opportunities to attend training courses to improve my current function' and 'I am well prepared for my work thanks to the training I receive'. All responses were assessed on a scale of 1 ('strongly disagree') to 5 ('strongly agree').
- *Proactivity*: Proactivity was evaluated using ten item scale developed by Claes et al. (2005). Examples of items are, 'if I see something I don't like, I fix it' and 'nothing is more exciting than seeing my ideas turn into reality'. Responses ranged from 1 ('strongly disagree') to 5 ('strongly agree').
- *LGO*: The 5-item scale developed by Vandewalle (1997) was used to measure LGO. Examples of items are, 'I like difficult tasks in which I can learn new skills' and 'I often look for opportunities to increase my knowledge and develop new skills'. Responses ranged from 1 ('strongly disagree') to 5 ('strongly agree').
- *IWB*: IWB was measured on the Janssen scale (2000). Examples of items are, 'I create new ideas to solve difficult problems' and 'I introduce new ideas in the working environment in a systematic way'. The items were evaluated on a scale ranging from 1 ('never') to 5 ('always').
- *Control variables*: Based on prior research, we controlled for three demographic factors that have been found significantly related to innovative behaviours: gender, age and education (e.g., George and Zhou, 2001; Cangialosi et al., 2020a; Madjar et al., 2002). For instance, previous studies have shown that age and education can be correlated with IWB, drawing on the idea that both older and higher educated individuals are more capable to innovate due to greater expertise (e.g., Zhang and Bartol, 2010). Moreover, although studies have highlighted that gender has non-significant effects on employee innovative related constructs (e.g., Shanker et al., 2017), it may serve as a proxy of the type of job. In the industrial context, women are often employed in offices which may lead to more stimuli and opportunities to innovate in contrast in comparison to production jobs. Therefore, those variables were included as controls. Gender was operationalised by the assigning value of '1' to males and '2' to females, age, '1' 18–25 years, '2' 26–35 years, '3' 36–45 years, '4' 46–55, '5' 55 years and educational level, '1' elementary school, '2' middle school diploma, '3' high school diploma, '4' master degree, '5'. Age has been categorised in order to increase confidence in anonymity, as employees are more likely to fill out the questionnaire if they can indicate categories of tenure and age rather than providing exact, and possibly unique details.

4 Results

4.1 Preliminary analysis

Prior to our main analyses, we conducted a one-way ANOVA to determine the effects of control variables on the independent and dependent variables. Results indicated that the levels of variables of interest (IWB, TRAIN, PRO and LGO) did not differ significantly across gender ($F_{(1, 382)} = 0.098$, $p = 0.75$; $F_{(1, 382)} = 0.047$, $p = 0.826$; $F_{(1, 382)} = 0.403$, $p = 0.526$; $F_{(1, 382)} = 0.064$, $p = 0.801$, respectively), age ($F_{(4, 379)} = 1.185$, $p = 0.317$; $F_{(4, 379)} = 0.913$, $p = 0.457$; $F_{(4, 379)} = 0.376$, $p = 0.826$; $F_{(4, 379)} = 2.081$, $p = 0.083$, respectively) and education level ($F_{(4, 379)} = 1.253$, $p = 0.288$; $F_{(4, 379)} = 1.655$, $p = 0.160$; $F_{(4, 379)} = 2.322$, $p = 0.056$; $F_{(4, 379)} = 1.258$, $p = 0.286$, respectively). For this reason, control variables were not included in subsequent statistical analyses.

Statistical analyses were conducted using R programming and Spss. A two-step approach was followed as suggested by Anderson and Gerbing (1988). First, a measurement model was evaluated by confirmatory factor analysis, with the maximum likelihood extraction and Oblimin rotation method. Cronbach's alpha (α) was used to evaluate the reliability of the individual measurements. Secondly, the hypothesised model was tested with the model comparison approach.

The mediation effect (Hypothesis 2 and 3) was tested using an SPSS application (PROCESS, Model 4 and 8) provided by Preacher and Hayes (2004) and also applying the bootstrap technique to verify the importance of the indirect effect (Cheung and Lau, 2008). Intervals of confidence (95%) of the mediating effects were calculated.

The moderation effect (Hypothesis 3) was examined following the recommendations of Little et al. (2006). Specifically, centred product terms of the latent construct were used to simulate the interaction in the structural model. The nature of the interaction was tested following the method of Aiken et al. (1991). The regression lines have been drawn for the association between independent variable and dependent variable.

The $\Delta\chi^2$ test with a degree of freedom (Kline, 2005) was used to test the hypothesis by comparing the models. The following indices were used to evaluate the goodness of the model fit: the comparative adaptation index (CFI), the square root of the approximation error average (RMSEA) and the square root of the standardised residual mean (SRMR). The following criteria are considered as having an adequate fit: $\chi^2/df < 3.00$; $CFI > 0.90$; $SRMR < 0.08$ and $RMSEA < 0.08$ (Hair et al., 2010; Hu and Bentler, 1999). Finally, the correlation analysis between the variables was performed using the Pearson coefficient (r).

4.2 Testing for the proposed model

Table 1 shows correlations, means, standard deviations and Cronbach's Alphas for the study variables. Factor loadings were higher than the limit value of 0.60 (Hair et al., 2012), so we were able to further examine the hypothesised constructs, including IWB as a single dependent variable of the analysis.

Multicollinearity was checked by assessing variance inflation factors (VIF). The results showed that VIF values associated with the predictors are within acceptable limits between 1.08 and 1.21 (Hair et al., 2010).

Table 1 Descriptive statistics and intercorrelations between variables.

		<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1	IWB	3.02	0.85	(0.90)					
2	TRA	3.32	0.97	0.34**	(0.74)				
3	PRO	3.59	0.74	0.35**	0.31**	(0.77)			
4	LGO	4.16	0.64	0.34**	0.27**	0.41**	(0.78)		
5	Gender	1.70	0.45	0.01	0.01	-0.03	0.02		
6	Age	3.06	1.01	0.01	0.07	0.01	-0.06	-0.04	
7	Education	2.89	0.99	-0.02	-0.06	0.03	-0.04	-0.24**	-0.09

Notes: N = 384. $p^* < 0.05$, $**p < 0.01$. Internal consistency coefficients (Cronbach's alphas) are presented along the diagonal in parentheses. LGO = Learning goal orientation, TRA = HR training practices, PRO = Proactivity; IWB = Innovative work behaviour.

Confirmatory factor analysis was performed for the four-factor structure. All indicators significantly loaded in the corresponding constructs ($p < 0.001$) and the measurement model supported the validity and distinctiveness of the constructs by exhibiting good psychometric properties ($\chi^2 = 497.449$; $df = 273$; CFI = 0.91; RMSEA = 0.07; SRMR = 0.06).

Furthermore, the four-factor structure was compared with two different three-factor structures in which HR training practices and LGO (alternative model 1) and HR training practices and proactivity (model 2) loaded on a common factor each. Subsequently, the four-factor structure was compared with one of two factors, with proactivity, training and LGO loading on a single factor (model 3). Finally, the four-factor structure was compared with a one-factor structure (model 4) in which all the variables loaded onto a common factor. The three, two and one factor alternative models had a worse fit with the data. Thus, the four-factor model was maintained (Table 2).

Table 2 Fit indices for confirmatory factor analyses

	χ^2	<i>Df</i>	$\Delta\chi^2$	Δdf	CFI	RMSEA	SRMR
Hypothesised 4-factors model	537.381*	293			0.91	0.06	0.05
Model 1 (3 factors; TRA -LGO combined)	564.814*	296	27.4	3	0.90	0.08	0.07
Model 2 (3 factors; TRA-PRO combined)	560.639*	296	23.2	3	0.91	0.07	0.07
Model 3 (2 factors; TRA-LGO-PRO combined)	766.225*	298	205.5	5	0.82	0.09	0.11
Model 4 (single-factor model)	1,608.327*	299	842.1	6	0.51	0.15	0.18

Notes: N = 384. * $p < 0.01$.

As all the constructs employed in this study derived from the same source, employee self-ratings, it is possible for common method variance (CMV) to impact the validity of the empirical results (e.g., Podsakoff et al., 2003). In order to address the issue, the unmeasured latent method factor approach was adopted following Podsakoff et al.'s (2003) recommendations. The results revealed that adding a new common method factor (CMF) provided a slightly better fit than the model without the method factor ($\chi^2 = 537.381$; $df = 293$; CFI = 0.91; RMSEA = 0.06; SRMR = 0.05), however, this did not result in a significant improvement over the basis of the measurement model and

statistical significance corresponds to the original results ($\chi^2 = 497.449$; $df = 273$; $CFI = 0.91$; $RMSEA = 0.07$; $SRMR = 0.06$). Overall, these results suggest that some CMB might be present, but not to an extent that would threaten the validity of the findings.

4.3 Hypothesis testing

As shown in Table 3 (Models 4), HR training practices were positively and significantly associated with IWB ($\beta = 0.30$, $p < 0.01$), thus supporting the H1 hypothesis.

In hypothesis H2 it was proposed that proactivity would mediate the relationship between HR training practices and IWB. As shown in Table 3, HR training practices are positively and significantly related to proactivity (Model 1: $\beta = .23$, $p < 0.01$) and that this is in turn positively and significantly related to innovative behaviour (Model 5: $\beta = 0.51$, $p < 0.01$). Moreover, the unconditional indirect effect of HR training practices on IWB via proactivity was tested employing Preacher and Hayes bootstrapping methodology (2004). Bias-corrected bootstrap results based on 5,000 resamples indicated a significant unconditional indirect effect of HR training practices on IWB through proactivity (0.07; 95% CI = [0.041, 0.111]). These results supported H2 hypothesis.

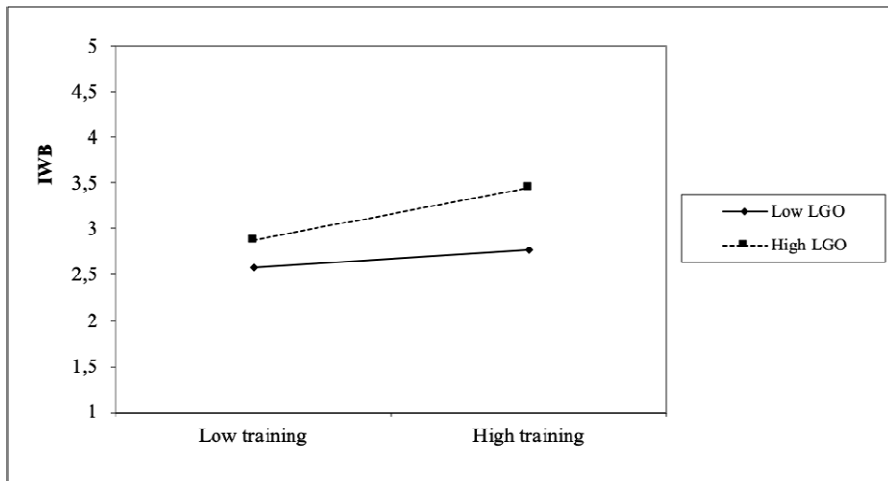
The H3a hypothesis stated that the orientation to LGO would moderate the relationship between HR training practices and proactivity, so that the relationship is stronger at higher levels of LGO. As shown in Table 3 (Model 3), the interaction term of training practices and LGO was not significant in predicting proactivity ($\beta = -0.85$, $p = NS$). Furthermore, the additional proportion of proactivity variance explained by the interaction term was lower than the direct relation of model 6. As a result, the H3a hypothesis was not supported.

Finally, H3b, concerning the role of moderator of LGO on the relationship between the HR training practices and innovative behaviour at work, as shown in Table 3 (Model 7), it was found that the interaction term between HR training practices and LGO and proactivity were positively and significantly related to IWB ($\beta = 0.18$, $p < 0.05$; $\beta = 0.24$, $p < 0.01$). Furthermore, the additional proportion of proactivity variance explained by the end of the interaction was higher than the direct relation of the model 6 ($\Delta R^2 = 0.02$). Consequently, the H3b hypothesis was supported.

Table 3 Hierarchical regression analysis

	Proactivity			IWB			
	(M1)	(M2)	(M3)	(M4)	(M5)	(M6)	(M7)
<i>Independent variable</i>							
Training	0.23**	0.19**	0.52**	0.30**	22**	0.19**	-0.59
<i>Mediator</i>							
Proactivity					0.33**	0.22**	0.24**
<i>Moderator</i>							
LGO		0.49**	0.66**			0.26**	-0.31
<i>Interaction</i>							
Training \times LGO			-0.85				0.18*
R^2	0.09	0.21	0.22	0.11	0.19	0.22	0.24

Notes: N = 384. * $p < 0.01$; ** $p < 0.001$.

Figure 2 LGO as a moderator in the relationship between training and IWB**Table 4** Conditional effect

		95% CI		
	Conditional effect	SE	LL	UL
-1 SD	0.12*	0.06	0.01	0.23
MEAN	0.18**	0.04	0.10	0.26
+1 SD	0.29**	0.05	0.19	0.40

In order to clarify this conditional effect, simple slope test was conducted. As shown in Figure 2, the relationship between training practices and IWB was found to be stronger for employees with high levels of LGO (M +1 SD, simple slope = 0.29, $p < 0.01$) compared to those with low levels (M -1 SD, simple slope = 0.12, $p < 0.05$), as reported in Table 4.

5 Discussion

5.1 Theoretical implications

HR training practices have recently emerged as a fundamental element of corporate strategies, in fact, more and more organisations are introducing continuous training processes to stimulate the growth and improvement of their employees' skills in the workplace (Tummers et al., 2015). Continuous learning and the consequent development of knowledge and skills are widely recognised as extremely important factors capable of ensuring the long-term success of companies (Lee et al., 2016).

Consistent with previous research (Collins and Smith, 2006; Sung and Choi, 2014), the present study provides an empirical demonstration of the importance of HR training practices in promoting innovation at the individual level. The results confirmed the hypotheses, revealing that HR training practices can effectively facilitate innovative behaviours both directly and indirectly by eliciting proactivity mechanisms.

Furthermore, the interaction between LGO and HR training practices has been significant in the relationship with innovative behaviour. Therefore, considering that the effect of training on innovation has not yet been sufficiently studied (Bos-Nehles and Veenendaal, 2019; Laursen and Foss, 2003), the main value of this work lies in its attempt to fill this specific gap by offering an empirical proof (Shipton et al., 2006).

Additionally, this research provides five contributions to the current state of the art. First, this study presented a model that integrates perspectives deriving from both management and innovation literature. Furthermore, although several studies have examined the relationship between HRM practices and innovation (e.g., Shipton et al., 2006), this is the first to investigate the direct and indirect effects of HR training practices of IWB.

Secondly, the current results show that perception of HR training practices influences innovative behaviour at work partly thanks to a mechanism activating the proactive components of the individuals. To our knowledge, the research has not yet fully examined the effects of work contexts on the development of proactivity. Perhaps because many of the scholars still perceive this construct as ‘fixed’ characteristic [Fugate et al., (2012), p.894].

Third, the results reveal that the condition of high LGO is able to moderate the relationship between training practices and innovative behaviour. This increases the growing evidence that there are consistent relationships between contextual variables and goal setting constructs (Klein and Lee, 2006).

Finally, this study adds up to the innovation literature extending current knowledge on the role of perceived contextual factors (e.g., HRM practices) and individual variables (e.g., LGO) on the development of IWB.

5.2 Practical implications

Organisations are more likely to sustain themselves and prosper within their target markets if they are able to innovate by engaging in the effort of introducing and applying new and useful ideas. This study provides guidance for companies wishing to promote innovation in the workplace, emphasising the importance of human resources practices of training in stimulating IWB among employees.

The main contribution of this research is to provide empirical evidence on the influence of HRM training practices on IWB both directly and indirectly through proactivity.

The results of this study highlight the need for further discussions on HRM practices by organisational professionals and scholars. More specifically, the implications of this work indicate that careful analysis is needed to evaluate ways to best reconcile individual perceptions of HRM, innovative behaviour and underlying mechanisms.

These results recognise several factors that could help management promote innovative behaviours in the workplace. First, this study recommends that organisations promote training activities as this would facilitate innovative behaviours by developing the knowledge, skills and abilities of their workers and consequently enabling them to face today’s competitive conditions (Lucas et al., 2009; Cangialosi et al., 2020b). Furthermore, human resource training practices have proven to be significant in creating the conditions facilitating the innovation process among workers by improving their proactivity characteristics. Finally, the importance of keeping personal orientation in

mind is underlined, as the relationship between training practices and innovative behaviour was positively affected by conditions of employees' high LGO.

5.3 Limitations

Despite the practical and theoretical contributions expressed, this research has several limitations. The study was based only on self-report measures, therefore the presence of the common method bias cannot be ruled (Podsakoff et al., 2003). Nevertheless, errors following the statistical recommendations of Podsakoff et al. (2012), it was tested whether the observed associations between variables resulted from common method. Although the use of self-reported data is common in behavioural research (Devloo et al., 2016), future research should try and adopt multi-source data through a combination of self-assessments, peer reviews of colleagues and managerial relationships in order to reduce to the minimum the impact of subjectivity.

Furthermore, the results are based on data collected through a cross-sectional approach, therefore it is important to underline that they do not provide information on causality and how relationships evolve over time. In the future, research should adopt longitudinal approaches to identify relationships between training practices, proactivity, LGO and IWB over time.

Further, although past research has emphasised the importance of differentiating the three distinct IWB behaviours to discover their relationships with other constructs (de Jong and den Hartog, 2010), this study did not distinguish between idea generation, idea promotion and implementation of ideas. These behaviours could have been influenced differently by the variables used in this study. Future research should try to isolate IWB components.

Another limitation is that this study has focused exclusively on the individual level of analysis, so it is not clear whether the variables considered actually contribute to innovation at the organisational level, either directly or indirectly through workers' IWB.

Finally, the present study did not adequately consider the generalisability of the results, since it was based on a small sample of relatively small companies, it would be important to test the same model in samples characterised by a larger number of companies, or by companies with greater number of workers.

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