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The mediating role of social support in the evaluation of training effectiveness

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Abstract

Purpose – The purpose of this study is to contribute to the understanding of factors that affect training effectiveness. According to the literature, social support, perceived content validity, transfer design, the motivation to improve work through learning and positive transfer, contribute to the effectiveness of training.

Design/methodology/approach – The sample used consisted of 202 employees with ages between 18 and 60 years, working for an insurance company where they had training for a period of three months.

Findings – The results show a relationship between perceived content validity and transfer design, as well as with the motivation to improve work through learning. A mediating role of social support was also evident in this relationship. Finally, the authors highlight the findings of the relationship between motivation to improve work through learning and positive transfer.

Originality/value – These findings contribute to the literature by demonstrating how the role of social support can increase training effectiveness in organizations.

Keywords Mediation, Social support, Training effectiveness

Paper type Research paper

Introduction

In contemporary professional milieus, where increasing economic and social uncertainty and unpredictability prevail, organizations aim to increase their productivity and maintain their competitiveness on a consistent basis (London and Moore, 1999; Matos and Lopes, 2008). In view of these continuous emerging challenges, managers tend to cope and maintain high levels of quality control by focusing on the acquisition of new knowledge and skills (Caetano, 2007; van Eerde *et al.*, 2008) through strategic training which assumes a key role for any organization (Bulut and Culha, 2010; Tanova and Nadiri, 2005). Hence, training is a human resource practice that helps organizations and their respective workers deal with the effects of changes that occur at different levels in the company (Ibrahim, 2004). Thus, training has been one of the most often used practices known to increase individual and organizational performance (Winfred *et al.*, 2003).

The evaluation of training transfer and its effectiveness has increasingly gained importance. In fact, due to the actual levels of competitiveness, empirical evidence has



demonstrated that training directly contributes to the development of organizational performance (Holton, 1996). Consequently, organizations tend to want to understand whether the investments made in training have positive return and whether there are solid benefits that might accrue from this training (Dionne, 1996; Faerman and Ban, 1993; Plant and Ryan, 1992).

According to Holton *et al.* (2000), over the past 10 years, several studies have demonstrated that the transfer of learning acquired in training to the workplace is a complex process that involves several factors (Baldwin and Ford, 1988; Ford *et al.*, 1998). For example, Holton *et al.* (2003) consider that within a range of factors that influence the process of transfer, social support provided by the organization can be considered one of the main factors for an effective training transfer. Moreover, the climate of transfer, in which social support is included, should be considered as a mediating variable in the relationship between organizational context and the attitudes and behaviors of employees in the workplace (Holton *et al.*, 2000). Other studies consider transfer climate as an important variable that significantly contributes to both the ability of the trainee and the motivation that employees have to transfer learning to the workplace (Huczynski and Lewis, 1980; Tracey *et al.*, 1995).

However, researchers have shown that studies regarding the understanding of how work environment influences the transfer of learning are still scarce (Holton *et al.*, 2000; Pham *et al.*, 2012). To exemplify, Chiaburu *et al.* (2010) argue that despite the proven importance of social support on organizational performance and employee behavior, the relationship of this variable with the transfer of learning acquired in training has been less studied. According to Borges-Andrade *et al.* (2006), studies should explore these relations specifically by contemplating social support to improve training transfer.

The literature has shown some incoherence regarding the effect of work environment variables, such as social support on training transfer (Cheng and Ho, 2001). While some studies found that social support has positive effect on training (Holton *et al.*, 2000; Pham *et al.*, 2012), other studies found no significant relationship with training transfer (Van der Klink *et al.*, 2001). To shed some light on the current literature, we aim to understand the mediator role of social support in the relationship between perceived content validity and transfer design and the training outcomes of motivation to improve work through learning.

Similar to investigations conducted in Thailand (Homklin *et al.*, 2014), most studies on training effectiveness in Portugal have focused on Kirkpatrick's Levels 1 (reaction/satisfaction) and 2 (learning). In fact, little research has been conducted on the transfer of training (Velada *et al.*, 2007). However, research has identified several areas in need of additional studies. First, considering the importance of work environment and its relationship with training transfer (Blume *et al.*, 2010), few studies include calls (Borges-Andrade *et al.*, 2006; Saks *et al.*, 2014) for examining the role of social support in training transfer processes. Second, researchers (Egan, 2008) have called for a greater focus on the direct and indirect relationships between supportive subcultures and supportive leadership to better understand the motivation to transfer training. Finally, considering that perceived content validity and transfer design are difficult to manipulate, training interventions that enhance mediation processes such as social support may lead to training effectiveness (Stanhope *et al.*, 2013).

In light of these suggestions, this study aims to determine the influence of social support on the transfer of learning acquired in training and, consequently, on the

efficacy of that training. To determine the influence of social support on the transfer and training efficacy, other variables described in the literature were also considered, namely: perceived content validity, transfer design, motivation to improve work through learning and positive transfer.

In sum, the primary purpose of the present study is to understand the extent to which social support influences the motivation to improve work through learning. Moreover, we aim to understand the mediating role of social support in a model that includes variables, such as the relationship between the perceived content validity and transfer design with work motivation improvement through learning. Additionally, we aim to study whether motivation to improve work through learning appears as a predictor to explain the variance of positive transfer of knowledge to the workplace.

Theory

According to [Salas and Cannon-Bowers \(2001\)](#), a systematic approach is needed to evaluate training effectiveness. Specifically, and contrarily to what some managers might consider, the success of a particular training depends not only on the method used, but also on the way training and learning are positioned, supported and enhanced in the organization. Similarly, trainee motivation and concentration must be considered throughout the evaluation of training effectiveness, along with the existing organizational mechanisms which ensure that the transfer of acquired knowledge is made to the workplace ([Salas and Cannon-Bowers, 2001](#)). Accordingly, several authors ([Baldwin and Ford, 1988](#); [Cheng and Ho, 2001](#); [Mathieu et al., 1992](#)) have argued that training effectiveness is influenced by several factors, of which the present study will only consider perceived content validity, transfer design, social support, motivation to improve work through learning and positive transfer. That is, factors that have revealed to play a significant role in training effectiveness.

Perceived content validity

Perceived content validity is the degree to which trainees believe that the training content reflects all function requirements accurately. This variable, which is essential in the design of any training program, is extremely important to explain positive training transfer to the workplace ([Baldwin and Ford, 1988](#); [Holton et al., 2000](#)). According to [Knowles \(1984\)](#) for instance, trainees can better learn training content when they perceive content relevance in the sense that it meets specific needs and/or fills in certain gaps in the workplace. For example, [Clement \(1982\)](#) discovered that trainees' perception regarding the relevance of the training content increased their learning capacity. Additionally, [Garavaglia \(1993\)](#) found that work environments supporting transfer by making training more relevant for specific functions, improve training transfer to the workplace. In a study conducted by [Holton et al. \(2000\)](#), a positive and significant relationship between perceived content validity and factors relating to the work environment was found (e.g. peers and supervisors support). In addition, [Seyler et al. \(1998\)](#) showed that perceived content validity is significantly associated with motivation to transfer learning ($\beta = 0.201$). What is more, in a study performed by [Huczynski and Lewis \(1980\)](#), trainees who were aware of the usefulness and importance of training for their work performance, revealed higher motivational levels to transfer what they had learned to the workplace. Thus, the perceived content validity appears as a significant predictor of training transfer ([Bates et al., 1998](#)), essentially due to an

increase of the motivational levels to improve work effectiveness. Accordingly, we posit the following hypothesis:

- H1.* Perceived content validity is positively and significantly correlated with motivation to improve work through learning.

Mediating role
of social
support

Transfer design

Transfer design can be defined as the degree to which training is designed and implemented so as to prepare trainees for training transfer (Holton, 1996). It implies a concern between training content and job requirements (Velada *et al.*, 2007). This variable can determine the success or failure of training transfer to the workplace because it provides the ability to transfer (Holton, 1996). That is, although there may be learning at a cognitive level, it is essential to consider its positive transfer to the workplace. Thus, managers should deliberate different training strategies and methodologies to teach new knowledge (Hutchins *et al.*, 2010), as well as provide different opportunities to apply this knowledge in the workplace (Holton, 1996). In fact, there is empirical evidence (Baldwin and Ford, 1988; Velada *et al.*, 2007) showing that transfer designs significantly increased the probability of the effective transfer of learning. Nonetheless, other studies have revealed that the opportunities given to workers to use what they have learned in training in the workplace depends greatly on the resources, technology, relevance and potential application of the contents available to them (Hutchins *et al.*, 2010; Kupritz, 2002). Moreover, Holton *et al.* (2000) added that transfer designs had a positive and significant relationship with environmental factors, such as the support given by supervisors and peers. Also, a recent study showed that the transfer of training is related to perceived organizational support and job satisfaction (Zumrah and Boyle, 2015).

Therefore, Holton (1996) argued that trainees that were invited to reflect on how to apply new knowledge and skills to the workplace, improved their capacity to transfer learning. Moreover, this author suggests that when motivation to transfer is combined with positive transfer, trainees are able to increase their knowledge transfer. In fact, transfer designs improve self-efficacy and positive trainee reactions, which in turn reflect higher levels of motivation to transfer knowledge. Accordingly, Bhatti and Kaur (2010) found that transfer design factors improve training transfer through self-efficacy and motivation. Consequently, transfer designs are considered a significant predictor of motivation to improve work through learning. This evidence gives rise to the second hypothesis of the present study:

- H2.* The transfer design is positively and significantly correlated with motivation to improve work through learning.

Social support

Blume *et al.* (2010) developed a meta-analysis of transfer of training that included 58 journal articles considering the importance of work environment factors and its relationship with training transfer. Social support is one of the most important work environment variables for transfer of training (Saks *et al.*, 2014) and plays an important role in explaining various phenomena in organizational behavior (Huynh *et al.*, 2013; Schreurs *et al.*, 2012). Essentially, this variable explains the degree with which supervisors and peers encourage the acquisition and use of relevant competencies to

perform tasks. Several studies in the literature have shown that trainees' perceptions regarding social support before, during and after training can be considered as an important predictor in explaining training transfer (Facteau *et al.*, 1995; Smith-Jentsch *et al.*, 2001; Tracey *et al.*, 1995; Tziner *et al.*, 1991). Additionally, other studies (Facteau *et al.*, 1995; Tracey *et al.*, 1995) have revealed that social support is related to the transfer of learning more solidly than other organizational variables. In accordance, Huczynski and Lewis (1980) found that supervision style and attitude appear as important factors that explain the intention to transfer new knowledge to the workplace. Campbell and Cheek (1989) also argue that supervisors' engagement is important in the training transfer. Accordingly, the transfer of new behaviors and skills acquired in training is difficult to achieve without the support of supervision. Furthermore, Cohen (1990) showed that trainees with more support from their supervisors showed stronger beliefs about the usefulness of the knowledge acquired to perform individual tasks at work.

According to Bates *et al.* (2000), peer support can also be considered as a significant predictor in explaining the training transfer. For example, Ford *et al.* (1992) found an important contribution of group work support on performance in highly demanding tasks. Additionally, and in line with other empirical evidence suggested by Pea (1987), social support (from supervisors and peers) significantly contributes to the training transfer to the workplace. Also, studies developed by Chiaburu and Tekleab (2005), Facteau *et al.* (1995) and Seyler *et al.* (1998) revealed that the perception of a higher and positive social support (from peers and supervisors) results in higher motivation to transfer. However, little is known about the influence of the perceptions of social support to increase learning effectiveness (Lancaster and DiMilia, 2014).

Given the studies previously mentioned, the following two hypotheses were developed in this study:

- H3a. The relationship between perceived content validity and motivation to improve work through learning is mediated by social support.
- H3b. The relationship between transfer design and motivation to improve work through learning is mediated by social support.

Motivation to improve work through learning

The theme of work motivation has been addressed in several studies (Baldwin and Magjuka, 1997; Colquitt *et al.*, 2000; Facteau *et al.*, 1995; Martocchio, 1992; Mathieu and Martineau, 1997; Mathieu *et al.*, 1992; Noe and Schmitt, 1986; Quinones, 1995). However, despite these studies addressing this variable, its relationship with training has been neglected in the literature (Clark *et al.*, 1993). Furthermore, the trainee motivations to engage in training activities have only been associated with the effectiveness of training (Naquin and Holton, 2003). According to Naquin and Holton (2003), motivation is a relevant component in explaining training effectiveness and efficacy in the workplace. In line with this, Goldstein (1991) considers that trainees' motivation is essential when contemplating the benefits of any training program.

Specifically, the concept of motivation to learn was defined by Noe and Schmitt (1986) as the trainee's determination to learn the training contents. That is, the motivation to learn consists of the enthusiasm in participating in training programs. However, Clark *et al.* (1993) consider that even well-developed and sophisticated programs may not be effective, if trainees do not have the motivation to learn. Additionally, Sanders and

Yanouzas (1983) concluded that when individuals participate in training programs, they already possess certain attitudes and expectations that can have a positive or negative impact on the learning process. Mathieu and Martineau (1997), for instance, found that training motivation is important for an effective training program. Moreover, individuals that are motivated to learn are also those who most likely feel motivated to apply new skills in the workplace (Naquin and Holton, 2003).

Another important concept in the literature is the motivation to transfer knowledge, which consists of the direction, intensity and persistence of effort in the use of skills and knowledge learned for the workplace (Colquitt *et al.*, 2000; Holton *et al.*, 2000). This concept can also be considered as the internal will individuals have that influences and promotes the implementation of new knowledge and skills in the workplace (Naquin and Holton, 2003). However, according to Naquin and Holton (2003), motivation to learn, training motivation and motivation to transfer appear as three independent variables that may be somewhat limited in environments of organizational learning. Accordingly, the authors developed a new construct entitled motivation to improve work through learning with the aim of demonstrating how motivation influences effectiveness and performance at work. This new construct refers to the trainees' motivation to improve results at work by being involved in training programs and learning activities.

As for positive transfer, this construct is defined as the degree with which trainees actually apply the knowledge, skills and attitudes acquired during training (Baldwin and Ford, 1988). The difficulty in transferring knowledge acquired in training to the workplace effectively has been recognized by several authors (Egan, 2008; Stanhope *et al.*, 2013), indicating that this problem has not received the required attention. Within this rationale, we tested whether a trainee that is motivated to improve work through learning has a more positive transfer of the acquired knowledge.

Accordingly, the following hypothesis was considered:

H4. Motivation to improve work through learning is positively and significantly correlated with positive transfer.

Method

Research setting

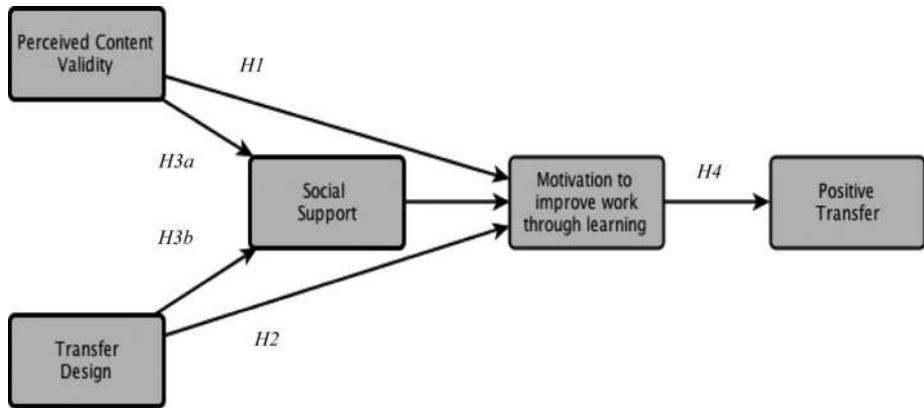
As previously mentioned, knowledge about the role of social support in training transfer and training effectiveness has been targeted as an area that needs further investigation. Moreover, the variables associated with social support have also been considered as important factors that require further exploration (Borges-Andrade *et al.*, 2006; Chiaburu *et al.*, 2010; Holton *et al.*, 2000). Accordingly, this study aims to demonstrate the extent to which social support influences the motivation to improve work through learning. Social support appears as a variable that mediates the relationship between the independent variables of perceived content validity and transfer design with the dependent variable of motivation to improve work through learning.

These assumptions are designed to test the hypotheses previously presented and may be observed in Figure 1.

Sample and procedure

This study can be considered a case study, as it was conducted with a sample of 202 employees (22.4 per cent of all employees in the company, where in the present sample 59.9 per cent are female) from a multi-national insurance company. One of the main

Figure 1.
Conceptual model for
evaluating the
effectiveness of the
training



criteria considered in this study was that all employees had attended at least one training action during the past three months. Considering the age distribution, participants were mainly between 20 and 30 years of age (36.1 per cent) and between 31 and 40 years of age (29.2 per cent). What is more, 47 per cent of the participants had a degree in a relevant area for their job roles. Regarding seniority, 38.6 per cent of the participants had been working for the company for about 1-5 years. As for the content of the last training program, 71.3 per cent of the participants answered that they had attended training courses with technical content (topics related with insurance procedures).

Authorization was granted by the training manager of the company concerning the distribution of the questionnaire during working hours. All questionnaires were personally delivered in the workplace and anonymity and confidentiality were ensured to all participants.

Instruments

Data were collected through a self-report measure with a five-point Likert scale (1 “strongly disagree” to 5 “strongly agree”). Cronbach’s alphas were calculated as a measure of internal consistency. Participants were invited to answer according to the last training they participated in the company. The questionnaire included socio-demographic variables to measure gender, age, educational background and seniority.

Perceived content validity. The perceived content validity variable was measured with four items adapted from the Learning Transfer System Inventory (LTSI; Holton *et al.*, 2000). Two examples of items of this variable include:

- (1) “What was taught in training closely matches my job requirements”; and
- (2) “The methods used in training are very similar to how we do it on the job”.

These items (Holton *et al.*, 2000) revealed an internal high consistency ($\alpha = 0.84$). Further principal component analyses conducted within the present study revealed a single factor structure with 64.01 per cent of the explained variance and high internal consistency (0.81).

Transfer design. Transfer design was also measured using four items adapted from the LTSI (Holton *et al.*, 2000). Two examples of items are:

- (1) “the way the trainer(s) taught the material made me feel more confident so that I could apply it”; and
- (2) “the activities and exercises the trainers used helped me understand how to apply what I learned at my job”.

These items have also shown an adequate internal high consistency ($\alpha = 0.85$) in previous studies (Holton *et al.*, 2000). A single factor was found through principal component analysis, explaining 69 per cent of the total variance. The measurement of the transfer design revealed a high internal consistency (0.85).

Social support. Social support was measured by means of four items based on Tracey *et al.*'s (1995) measure. Items of this variable include:

- “supervisors give recognition and credit to those who apply new knowledge and skills to their work”; and
- “coworkers encourage each other to use new knowledge and skills on the job”.

In previous studies (Tracey *et al.*, 1995), items revealed high internal consistency ($\alpha = 0.91$). In the present study, we proceeded with a principal component analysis of a first component with eigenvalues above 1, explaining 68.3 per cent of the total variance (Cronbach's alpha = 0.84).

Motivation to improve work through learning. Motivation to improve work through learning was measured by means of 14 items, resulting in four independent factors (described below), which according to Naquin and Holton (2003), can measure motivation to improve work through learning:

- (1) *Attitudes toward training* were measured by means of three items adapted from Weinstein *et al.* (1994). An example of an item is: “I believe that learning is important for my professional development”. In previous studies (Weinstein *et al.*, 1994), these items showed adequate internal consistency ($\alpha = 0.71$).
- (2) *Performance outcome expectations* were measured with four items adapted from the LTSI (Holton *et al.*, 2000). An item example is: “my organization value my performance”. These items revealed good internal consistency ($\alpha = 0.83$) in previous studies (Holton *et al.*, 2000).
- (3) *Motivation to learn* was measured by means of three items adapted by Weinstein *et al.* (1994). An item example is: “I try to give my best in the training program, even if I don't like it”. These items showed a reasonable internal consistency ($\alpha = 0.65$) in previous studies (Weinstein *et al.*, 1994).
- (4) *Motivation to transfer* was measured with four items adapted from the LTSI (Holton *et al.*, 2000). An example of an item is: “I get excited when I think about trying to use my new learning on my job”. These items also demonstrated high internal consistency ($\alpha = 0.83$; Holton *et al.*, 2000).

As mentioned before, 14 items were used to measure 4 factors. Through a principal component analysis and Kaiser criteria (extraction for eigenvalues above 1), all variables presented an adequate factorial validity except one item “I can easily find an

excuse not to complete the training program”, which presented low communality (0.409). For this reason, the item was removed from the analysis. New principal component analysis was conducted and four components were retained with 72.58 per cent of the explained variance. The measurements obtained for:

- (1) “performance outcome expectations” ($\alpha = 0.86$);
- (2) “motivation to transfer” ($\alpha = 0.85$);
- (3) “motivation to learn” ($\alpha = 0.67$); and
- (4) “attitudes toward training” ($r = 0.84$) revealed good internal consistency.

In line with [Naquin and Holton \(2003\)](#), motivation to improve work through learning can be considered a single first-order factor with the remaining four second-order factors obtained in the previously presented principal component analysis. Therefore, we proceeded to analyze the first-order index (by computing the mean score of the four dimensions) and found a high internal consistency ($\alpha = 0.87$).

Positive transfer. Positive transfer was measured with three items based on [Tesluk et al. \(1995\)](#) scale to evaluate the degree of knowledge transferred to the workplace. Two examples of items are:

- (1) “I have applied what I have learned in training to improve my performance”; and
- (2) “what I learned in training has helped me improve my performance greatly”.

These items revealed a good internal consistency ($\alpha = 0.90$) in previous studies ([Tesluk et al., 1995](#)). In the present study, the principal component analysis showed a single factor explaining 85.4 per cent of the total variance and internal consistency ($\alpha = 0.91$).

Results

Descriptive analysis

In [Table I](#), means, standard deviations and zero-order correlations of the studied variables are presented. Considering the mean scores, motivation to improve work through learning appeared as the variable with higher agreement among all trainees ($M = 4.10$; $DP = 0.49$), whereas perceived content validity can be considered as the variable with the lowest mean score ($M = 3.90$; $DP = 0.64$). In general, mean scores between variables were somewhat similar.

The variable motivation to improve work through learning was positively and significantly correlated with all the variables with values ranging between 0.73 (social support) and 0.61 (perceived content validity). Perceived content validity was less correlated with social support ($r = 0.42$, $p < 0.01$). Positive transfer was equally

Variables	M	DP	1	2	3	4
1. Perceived content validity	3.90	0.64				
2. Transfer design	4.03	0.63	0.73			
3. Social support	3.96	0.67	0.42	0.53		
4. Positive transfer	4.04	0.66	0.62	0.66	0.55	
5. Motivation to improve work through learning	4.10	0.49	0.61	0.68	0.73	0.66

Notes: Scale = 1 “strongly disagree” to 5 “strongly agree”; all values $p < 0.001$

Table I.
Means, standard deviations and correlations of the variables

correlated with motivation to improve work through learning and transfer design ($r = 0.66, p < 0.01$).

Test of hypotheses

As mentioned earlier, this study assumes that there was a positive and significant relationship between perceived content validity and motivation to improve work through learning, as well as between transfer design and motivation to improve work through learning. Subsequently, we assumed that these relationships were mediated by social support. To test this hypothesis, we performed multiple linear regressions. The following linear regression assumptions were all assured:

- linearity of the phenomenon under study;
- absence of multicollinearity;
- random residual variables with an expected zero value;
- homoscedasticity;
- independence of random residual variables; and
- normal distribution of random residual variables (Field, 2013).

In Table II, Model 1 tests the relationship between independent variables (perceived content validity and transfer design) and social support. Results showed that transfer design was positively and significantly related with social support ($\beta = 0.51, p < 0.01$). However, perceived content validity revealed a non-significant correlation with social support ($\beta = 0.09, n.s.$), which allowed us to reject *H3a*. All of these variables accounted for 28 per cent of the explained social support variance.

Nonetheless, we proceeded to the next step to test *H3b*. Therefore, Models 2.1 and 2.2 (Table II) were also run to test the effect of predictor variables (perceived content validity and transfer design), as well as the mediator variable (social support) on the criterion variable (motivation to improve work through learning). In Model 2.1, both perceived content validity ($\beta = 0.18, p < 0.01$) and transfer design ($\beta = 0.39, p < 0.01$) showed a positive and significant correlation on motivation to improve work through learning. Together, these studied variables explained 49 per cent of the total variance.

In Model 2.2, social support was positively and significantly correlated with motivation to improve work through learning ($\beta = 0.36, p < 0.01$), which according to Baron and Kenny (1986) is an important condition to explain a mediation effect. As can

Variables	Model 1	Model 2.1	Model 2.2
	Social support β	Motivation to improve work through learning β	Motivation to improve work through learning β
Perceived content validity	0.09	0.18*	0.15*
Transfer design	0.51*	0.39*	0.21*
Social support	–	–	0.36*
R^2	0.29	0.49	0.67
R^2 adjusted	0.28	0.49	0.67

Notes: b = standardized betas; * $p < 0.01$

Table II.
Multiple linear
regression to explain
social support and
motivation to
improve work
through learning.

be seen in Model 2.2 (Table II), although there was a reduction of the coefficients for both perceived content validity and transfer design, effects remained significant with the introduction of social support. Thus, we could not consider the hypotheses of total mediation, but only the existence of partial mediation. All variables in Model 2.2 explain 67 per cent of the total variance.

To analyze whether there were effects of partial mediation, the Sobel test was conducted. Results revealed the significance of these effects for both the perceived content validity ($z = 0.9, p < 0.01$) and the transfer design ($z = 4.8, p < 0.01$). Thus, through the analysis of these results, transfer design and motivation to improve work through learning were found to be positively and significantly related and this relationship was partially mediated by social support. For perceived content validity, we could not assume the mediation effect, as the first assumption was not accepted (Baron and Kenny, 1986) due to a non-significant correlation with social support.

To test *H4*, we ran a simple linear regression to analyze the relationship between motivation to improve work through learning and positive transfer. According to the results, motivation to improve work through learning revealed a positive and significant effect on the variable positive transfer ($\beta = 0.90, p < 0.01$), which allowed us to accept *H4*. Figure 2 summarizes the main results obtained in our study.

Discussion

Considering that the topic of training continues to be a relevant issue in the literature on organizational behavior, this research is particularly relevant because its main objective was to contribute to a better understanding of training effectiveness and to explore factors that may affect it. Additionally, we aimed to analyze the specific mediating role of social support on the relationship between perceived content validity and transfer design with motivation to improve work through learning – the latter being analyzed as a predictor of positive transfer.

Results confirmed *H1* by showing that perceived content validity positively and significantly influences motivation to improve work through learning. Our results are in accordance with previous studies, although the construct of motivation had been

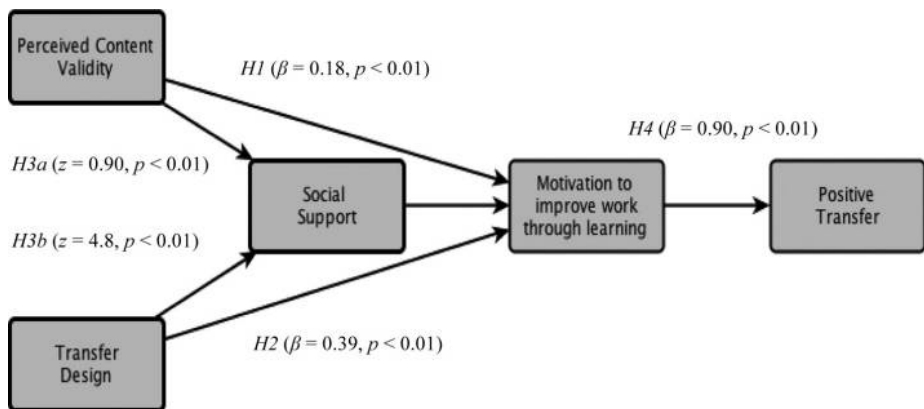


Figure 2. Model evaluating the effectiveness of the training and results obtained

studied from a different perspective. For example, Seyler *et al.* (1998) found a positive and significant relationship between perceived content validity and motivation to transfer. Other studies confirmed that perceived validity of the content is a valuable predictor for positive transfer and training efficiency (Bates *et al.*, 1998; Huczynski and Lewis, 1980).

Our second hypothesis predicted a positive and significant relationship between transfer design and motivation to improve work through learning, which was also confirmed. Accordingly, trainees who participated in training programs, where they knew how to apply skills learned during the training, tended to feel more motivated to improve work through learning. These results are in line with other evidence found by Holton (1996). According to the author (Holton, 1996), trainees who had learned how to apply new knowledge and skills to the workplace were more proud to transfer learning. This study also found that, when motivated, trainees' probability of transfer increases.

The adoption of the construct motivation to improve work through learning developed by Naquin and Holton (2003) proved to be suitable for this study. According to the results, we confirmed *H4* by showing that motivation promoted training effectiveness and, consequently, increased training transfer to the workplace. Trainees who tended to be more motivated to improve work through learning by participating and engaging in training programs also tended to show greater positive transfer. This evidence was also consistent with Naquin and Holton's (2003) findings, where motivation to learn and motivation to transfer proved to be potentially effective predictors of positive transfer of learning to the workplace.

Finally, this study assumed that social support acquires a mediator role. According to Holton *et al.* (2000), transfer climate (in which the social support is included) should be considered as a mediating variable in the relationship between the organizational context and employees attitudes and behaviors in the workplace. However, results revealed that social support partially mediated the relationship between transfer design and motivation to improve work through learning (*H3b*), but that this effect did not occur in the relationship between perceived content validity and motivation to improve work through learning (*H3a*).

First, it is important to note that we did not find a significant positive relationship between perceived content validity and social support, thus, contradicting previous studies (Holton *et al.*, 2000), where a significant and positive relationship between perceived content validity and environmental factors that include support from supervisor and peers was found. Subsequently, results also revealed that the influence exerted by perceived content validity on motivation to improve work through learning remained significant even when considering the role of social support. Therefore, we argue that there was no full mediating effect of a social support variable in this relationship.

However, the relationship between transfer design and social support revealed a significant and positive correlation. That is, trainees who tended to participate in training programs where methods and knowledge taught were transmitted so that trainees knew how to apply them, tended to perceive greater social support in the organization. These results are in line with the study of Holton *et al.* (2000), where there is a positive and significant relationship between the transfer design and some environmental factors, such as peer support and support from supervisors.

Later, when analyzing the mediating effect of social support on the relationship between transfer design and motivation to improve work through learning, results showed that this effect exists, but only partially. Essentially, trainees' social support from peers and supervisors directly or indirectly influenced how they judged the design of the transfer (how the training was designed and implemented to prepare trainees for transfer) and, consequently, their motivation to improve work through learning.

Theoretical contributions

The evidence found in this study can be considered an important contribution to the literature on training effectiveness, as few or no studies show that social support can be an important mediator in understanding the motivation to improve work through learning. Moreover, our findings complement and extend previous studies (Homklin *et al.*, 2014; Lancaster and DiMilia, 2014; Zumrah and Boyle, 2015) by providing an integrated framework that explains how contextual variables (e.g. perceived content validity, transfer design and social support) can be related to individual variables of training effectiveness. Specifically, our results show that contextual factors can explain the motivation to improve work through training and that this variable is an important antecedent of positive transfer. This study also shed some light on the incoherence regarding the role of social support on training effectiveness (Cheng and Ho, 2001). Moreover, our study is in accordance with previous studies (Holton *et al.*, 2000; Pham *et al.*, 2012), reinforcing the important role of social support on training effectiveness.

The current research also contributes to the HRM literature by specifically showing that social support mediates the relationship between transfer design and motivation to improve work through learning. The influence and proximity to supervisors and peers, as well as rewarding employees' efforts (Rhoades and Eisenberger, 2006), and thus meeting the latter's social-emotional needs (Yukl, 1994), reduces the effect of the transfer design variable, namely, the effect of training content and job requirements (Holton, 1996).

In short, we presented an empirically tested model in this study that provides a new understanding of social support, both in the transfer of learning to the workplace, as well as in the role of motivation to improve work through learning, and thus, we believe we have made an important theoretical contribution in the area of training effectiveness and evaluation.

Implications for management

The present study advances practical implications for managers, despite its limitations. First, consistent with the literature, it becomes increasingly clear that the role of transfer design and perceived content validity are both important for motivation to improve work through learning, which results in positive transfer of knowledge and behavior in the workplace. It is, therefore, crucial that both managers and those responsible for training programs conceive training plans and align them according to organizational goals and specific job requirements. Furthermore, from the results, we found that the relevance of different methodological approaches exposed during training can determine the success or failure of the training transfer (Holton, 1996). Accordingly, managers and those

responsible for training should trace a good communication plan, clarifying the aims and relevance of the training. Hence, trainees may eventually perceive the training content validity as added value for the workplace.

Social support has proven to be a significant variable to explain motivation to improve work through learning and, consequently, the transfer of knowledge acquired in training to the workplace. Thus, we suggest that employees should actively seek social networks and exploit social support to enhance their confidence during the training process (Homklin *et al.*, 2014). Accordingly, HR managers should provide infrastructures to enhance social support (e.g. chat room discussion). Companies should also provide opportunities to discuss potential training barriers and strengthen the relationship between trainees and supervisors/peers. Managers might advise potential trainees about the contents and goals of the course (Renta-Davids *et al.*, 2014), namely, potential benefits and expected outcomes. Moreover, manager and peer performance appraisal should consider not only the quantitative criteria, but the quality of the ties, measuring how they support the trainees and help them transfer knowledge to the workplace.

It is important for organizations to understand which factors influence supervisors and colleagues to stimulate employees' knowledge transfer in the workplace, ultimately, by creating an environment in which the expectancies are clear and employees are encouraged to talk about problems encountered at work.

Limitations and future studies

This study has some limitations that should be contemplated; the first pertaining to the use of a single measuring instrument. Thus, the internal validity of the study can be affected by variance from the common method. A second limitation relates to the sample size and representativeness. Our sample was collected by convenience, which represents socio-demographic and organizational specificities. Thus, results obtained in the present study cannot be generalized to other organizational realities. Therefore, we suggest a need to test the proposed model in other contexts. Sample size can also be considered as a limitation, as our study consisted of only 202 individuals, suggesting possible Type II errors in some statistical evidence. Moreover, the fact that organizational and socio-demographic variables were not controlled in the analysis can also constitute a limitation. What is more, Portugal also has high levels of collectivism – low individualism (Indiv = 27) (Hofstede *et al.*, 2010), which may explain the mediator role of social support. It would also be interesting to understand whether the effect of peer and supervisor support also applies in more individualistic countries, such as the USA (Indiv = 91).

Nonetheless, these limitations can be regarded as suggestions for future studies on the evaluation of training effectiveness. It would be relevant to perform this study based on other methods (e.g. interviews, longitudinal or experimental studies). Because we found a non-significant effect for the mediation of social support in the relationship between perceived content validity and motivation to improve work through learning, we suggest that perceived content validity should be replaced with organizational commitment in future studies. The level of organizational commitment of employees can influence how they perceive the relevance of training, for both the function and the organization (Tannenbaum *et al.*, 1991). Thus, organizational commitment can be considered as a predictor of training effectiveness (Tannenbaum *et al.*, 1991) – a

construct, which may also be related to the way trainees perceive social support. If trainees have an effective training experience, they may perceive this as an indication that the company supports and invests in training because it takes employees' level of knowledge and competence into consideration (Tannenbaum *et al.*, 1991). Moreover, several studies have also shown that organizational commitment is positively related with motivation to learn (Facteau *et al.*, 1995; Mathieu, 1988; Quinones *et al.*, 1995; Tannenbaum *et al.*, 1991).

The literature has included perceived organizational support and social support as work environment factors that contribute to training transfer (Lancaster and DiMilia, 2014; Zumrah and Boyle, 2015). Moreover, individual variables, such as organizational commitment (Tannenbaum *et al.*, 1991), are related with training transfer; however, little is known about the explained variance for each level of analysis. Thus, future studies should include multi-level analysis considering the organizational level of analysis (e.g. perceived organizational support), departmental (e.g. social support), supervisory (e.g. supervisor support), peers (e.g. peers support) and individual (e.g. organizational identity, organizational commitment and job embeddedness) level of analysis.

Conclusion

Overall, this study provides greater insights about factors and strategies that may intervene and, consequently, be put into practice to increase training and organizational success. Our study reinforces and extends previous studies, considering different antecedents of training transfer, by showing that we cannot ignore the role of social support on training effectiveness and motivation to improve work through learning. In sum, our findings shed new light on the relationship between social support, motivation to improve work through learning and training transfer to the workplace.

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Further reading

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Mediating role
of social
support

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