

Université de Montréal

Predicting post-training reactions from pre-training attitudes

par

Aurelija Adomaityte

Département de psychologie
Faculté des arts et des sciences

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ABSTRACT

As training and development programs have become one of the most essential elements for organizations, the question rises of what influences training effectiveness. Recently training motivation has been considered as the key determinant. Thus, the objectives of this particular study were to examine if training motivation correlates well with its antecedents and its outcomes as well as to see if training motivation plays a mediator role in predicting the outcomes of training.

Three pre-training variables were chosen for this study: general attitude toward training, training self-efficacy, and career planning. Immediate trainees' reactions were chosen as a post-training variable. A total of 152 employees from a large Quebecois company participated in the present study by filling out one questionnaire before training and one after.

The results of this study evidenced that training motivation can be predicted from general attitude toward training, training self-efficacy and career planning. Moreover, training motivation was shown to be the best predictor of trainees' reactions. Our results also showed that training motivation fully mediates the relationship between training self-efficacy and trainees' reactions and partially mediates the relationship between general attitude toward training and trainees' reactions, but only partially. Mediation effect of training motivation was not found between career planning and trainees' reactions. Additionally, this study discovered that new employees differ from permanent staff in their pre-training attitudes and post-training reactions.

The outcomes of the present study are discussed, some theoretical implications are commented and practical implications for the companies are suggested.

Keywords: general attitude toward training, training self-efficacy, career planning, training motivation, trainees' reactions, newcomers

RÉSUMÉ

Les programmes de formation et d'apprentissage sont devenus des éléments parmi les plus essentiels pour les compagnies et la question se pose de savoir ce qui influence l'efficacité d'une formation. Récemment, la motivation pour la formation a été considérée comme le facteur déterminant. Ainsi, les objectifs de cette étude étaient d'examiner si la motivation pour la formation corrèle bien avec les antécédents et les réactions des employés formés, ainsi que d'analyser si la motivation joue un rôle de médiateur dans la prédiction des résultats d'une formation.

Trois variables de « pré-formation » ont été choisies pour cette étude : l'attitude générale envers la formation, le sentiment d'efficacité personnelle en formation, et la planification de carrière. Les réactions immédiates des employés formés ont été choisies comme variable de « post-formation ». Un total de 152 employés d'une large compagnie québécoise a participé à cette étude en remplissant un questionnaire en début de formation et un autre à la fin.

Les résultats de cette étude ont mis en évidence que la motivation pour la formation peut être prédite par l'attitude générale envers la formation, le sentiment d'efficacité personnelle en formation et la planification de carrière. De plus, la motivation pour la formation s'est révélée être le meilleur facteur de prédiction des réactions des employés formés. Les résultats ont également montré que la motivation pour la formation agit pleinement comme médiateur dans la relation entre le sentiment d'efficacité personnelle et la réaction des employés formés, et comme médiateur partiel entre l'attitude générale envers la formation et les réactions. Pour finir, cette étude a permis de découvrir que les employés nouvellement arrivés diffèrent des employés permanents dans leurs attitudes pré-formation et leurs réactions post-formation. Les résultats de cette étude sont discutés, des implications théoriques sont commentées et des implications pratiques pour les compagnies sont suggérées.

Mots-clés: attitude générale envers la formation, sentiment d'efficacité personnelle, planification de carrière, motivation pour la formation, réactions d'employés formés, nouveaux employés

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*I dedicate this thesis to my mom Stase, my dad
Viktoras, my sisters Silvija and Vitalija, and my
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INTRODUCTION

Training has been long recognized as one of the most important issues for organizations (Kozlowski & Salas, 2010; Salas & Cannon-Bowers, 2001). Training and development programs are perceived to be one mechanism organizations use to contribute to their survival in today's changing and uncertain world (Saks & Haccoun, 2013). According to research by Salas, Tannenbaum, and Smith-Jentsch (2012), training and development activities allow organizations not only to adapt and compete, but to also excel, innovate, produce, be safe, improve service, and reach goals. Organizations, they state, understand that by investing in their employees they can stay competitive and yield greater results. Consequently, many organizations train, educate, and develop their workforce by investing in training and development programs. Annually, US organisations invest \$100 billion in training activities and Canadian organizations invest on average \$30 billion (Saks & Haccoun, 2007). Since 1995, Quebec's "Act to foster the development of manpower training" requires companies with payrolls of more than \$1 million dollars to invest a minimum of 1% of their payroll on government-accredited training. Given such investments in training programs, it becomes important to understand the effectiveness of those programs and how both employees and employers can profit from them.

The goal of trainings is their effectiveness and training effectiveness could be defined as the extent to which training objectives are achieved or desired results of training are produced. Training effectiveness is evaluated by measuring training outcomes, and historically organizations and training researchers have relied on Kirkpatrick's hierarchical model for evaluating training programs (Salas et al., 2012). Kirkpatrick recommended measuring, in sequence, the four following levels: reactions (how well trainees liked the training), learning (skill or knowledge acquisition), behaviour (resulting in changes of behaviour on the job), and results (tangible individual and organizational outcomes such as productivity, greater profit, turnover). Although there have been a lot of criticisms about Kirkpatrick's model and the relations between proposed hierarchical levels, Kirkpatrick's framework remains the basis for much of the evaluation by organizations today (Saks & Haccoun, 2013; Salas et al., 2012). The first level of Kirkpatrick's model is trainees' reactions. By far, this is the most popular and, very often, the only form of evaluation that is undertaken by organizations. Nevertheless, the research which focused on trainee reactions has only been moderate so far (Arthur et al.,

2003). In order to make trainings successful and effective it is however important to examine trainees' reactions to the training and try to understand the factors that affect their reactions.

In order to contribute to the limited research field, this study chose trainees' immediate reactions after training as the post-training variable. Our intention was to explore how to improve trainees' reactions to the training and what variables affect trainees' reactions the most. On this basis, we chose general attitude toward training, training self-efficacy, career planning, and training motivation as pre-training variables.

In the research literature the best predictor of trainees' reactions have been shown to be training motivation (Baldwin & Ford, 1988; Ford et al., 1998; Guerrero & Sire, 2001; Orvis et al., 2009; Tai, 2006). Additionally, some links with general attitudes toward training (Carlson et al., 2000; Ford & Noe, 1987; Warr & Bunce, 1995), self-efficacy (Chiaburu & Marinova, 2005; Mathieu et al., 1993; Quinones, 1995), and career planning (Chamberlain et al., 2012; Colquitt et al., 2000) have been found with trainees' reactions as well, but those correlations are weaker. On the contrary, general attitude toward training, self-efficacy and career planning have strong positive relations with training motivation (Carlson et al., 2000; Chiaburu & Marinova, 2005; Colquitt et al., 2000). On the basis of this knowledge, this study set to find out if training motivation plays a mediator role between its three pre-training variables (general attitude towards training, self-efficacy, career planning) and a post-training variable – immediate trainees' reactions.

THEORETICAL CONTEXT

Pre-training variables

Training motivation

Definition

According to Mathieu and Martineau (1997), one of the key determinants of training effectiveness is training motivation. Fleishman and Mumford (1989) and Quinones (1997) suggested that characteristics of trainees such as motivation and attitudes are more important to training success than course-content variables. Thus, the training motivation variable received much attention in the research world and many academics have tried to establish what training motivation really is and what it encompasses (Mathieu et al., 1992).

Mathieu, Tannenbaum, and Salas (1992) described training motivation as “trainees’ perceptions that doing well in the programme would lead to better job performance and consequently, to valued outcomes”. Colquitt et al. (2000) and Saks and Haccoun (2013) defined it as the “direction, intensity and persistence of learning-directed behaviour in training contexts”. Recently Zaniboni, Fraccaroli, Truxillo, Bertolino, and Bauer (2011) studied many different definitions of training motivation and discovered that there is a conceptual overlap between them. Zaniboni et al. (2011) stated that on one hand, training motivation is conceptualized on phenomenological descriptions, such as desire, interest, and involvement in the learning process. On the other hand, conceptualization is based on potential behavioural implications, such as quantity and persistence of the effort to learn and goal intention.

Zaniboni et al. (2011) concluded that the most appropriate definition of training motivation is the multi-dimensional perspective that includes Vroom’s (1964) valence-instrumentality-expectancy (VIE) approach. Vroom’s VIE model was often used in studies on motivation and it can easily be applied to training motivation. In training context, *expectancy* would be an individual’s belief regarding the probability that commitment and investment in training can lead them to learn or gain skills; *instrumentality* would be a perception of a relationship between performance in the training and the outcomes that can be obtained, and *valence* would be the anticipation of attractiveness and desirability of results that can be obtained by training. Evidently, Vroom’s VIE approach and the idea of Zaniboni et al. (2011)

of training motivation multidimensionality encloses all definitions and descriptions of training motivation and seems as the most developed description of training motivation to this date.

This study will employ a multi-dimensional concept of training motivation. We define it basing ourselves on Vroom's approach and include in training motivation definition the aspects of valence, instrumentality, and expectancy.

Links between pre-training variables and training motivation

In the past few decades researchers discovered the importance of motivation in training context. Noe (1986) suggested that motivation and attitudes play a critical role in achieving training effectiveness. Fleishman and Mumford (1989) and Quinones (1997) have suggested that motivation and attitudes of trainees can greatly influence the training course results. Moreover, training motivation is seen as a key determinant of training effectiveness (Mathieu & Martineau, 1997). Consequently, training motivation concept has received a good deal of attention (Colquitt et al., 2000; Kozlowski & Salas, 2010; Zaniboni et al., 2011).

Some researchers have suggested that individual-level influences on training motivation should be given greater attention (Baldwin & Ford, 1988; Colquitt & Simmering, 1998; Noe & Ford, 1992). Colquitt et al. (2000) stated that further theory is needed to uncover other intervening mechanisms that link individual and situational characteristics with training motivation and learning. Salas and Bowers (2001) suggested that we need to continue gaining a deeper understanding of training motivation, because it has direct implications on learning, design, and delivery of training. Collectively, all those authors call for further research to consider factors that influence training motivation.

In order to answer these calls, the present study will examine effects of individual-level antecedent variables (general attitude toward training, self-efficacy, career planning) on training motivation. The following sub-sections will define the three pre-training variables and discuss in more detail their links with training motivation.

General attitude toward training

Definition

Halloran (1967) wrote:

“If we know about an individual’s social attitudes, then not only we have a brief summary of what has gone before in the individual’s experience that may affect his behaviour, but we may also be able to say something useful about his aspirations, his motivations, his striving towards his goals and to know something about why, along the way, he deals as he does with a great variety of social objects and values” (p. 28).

An attitude can tell us a lot about an individual, the way he or she perceives the world around and how he or she is going to react to different objects. According to Sherif (see Halloran, 1967), a person’s socialization is revealed mainly through his/her attitudes. Those attitudes of individuals are formed in relation to the values or norms of their reference group or groups and once formed they determine the individual’s reaction in a characteristic way, to the groups, situations and the individuals with whom he or she comes to contact.

Attitude is a broad concept and many authors had tried to understand and define it. There exist numerous definitions to describe attitude, but it seems that the most frequently used one is that of Allport (1935). He defined *attitude* as “a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations with which it is related”. What Allport meant by this definition is that first, an attitude is a state of readiness leading the individual to perceive things and people around him in a certain way. Second, attitudes are not innate – they are learned, they develop and they are organized through experience. These states of readiness are relatively enduring but they are modifiable and subject to change. Finally, attitudes are dynamic. They have motivational qualities and can lead a person to seek (or avoid) the objects about which they are organized or in other words, if we like something we will seek it and if we dislike it, we will avoid it.

Even though Allport’s definition is quite explicit and has been used by many researchers, the definition of an attitude has been evolving. Following Allport, Daniel Katz (Halloran, 1967) defined attitude as the predisposition of an individual to evaluate some symbol or object or aspect of his world in a favourable or unfavourable manner. Attitudes, according to Katz, include both the *affective and feeling* core of liking or disliking, and the *cognitive or*

belief elements, which describe and perceive the object of the attitude, its characteristics and its relationship to other objects. Over the years the definition of attitude was explored further and more recent research has started to examine attitude as a multicomponent subject. Haddock and Huskinson (see Haddock & Maio, 2004) stated that multicomponent models of attitudes (Figure 1) share the basic tenet that attitudes are global evaluations of stimulus objects that are derived from three sources of information:

1. *Affective responses* that refer to feelings or emotions associated with an attitude object.
2. *Cognitions* that refer to beliefs about an attitude object.
3. *Behavioural information* refers to past behaviours associated with the attitude object.

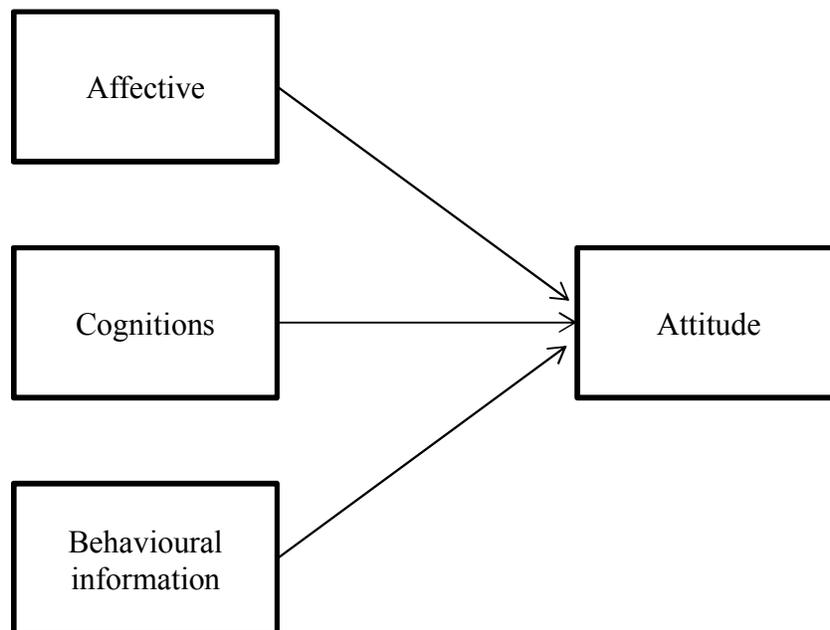


Figure 1: Model of attitude components (affections, cognitions, behaviours)

As shown above, attitude concept is extremely broad and needs to be specified in order to be understood. This study focused on *general attitude toward training*. Applied to Haddock and Huskinson model this definition encloses trainees' feelings toward training, their beliefs about training, and past behaviours associated with the training.

Link with training motivation

There are several of studies in psychology literature that discuss attitude toward training (Carlson et al., 2000; Fecteau et al., 1995; Ford & Noe, 1987; Noe, 1986), but the studies and statistical links are very limited on this subject. Nevertheless, Warr and Bunce (1995) found a positive and significant correlation between general attitude and specific motivation ($r=.61$, $p<.01$) in their study. Carlson et al. (2000) also discovered that attitude toward training is positively and significantly related to training motivation ($r=.21$, $p<.01$). Basing ourselves on these two findings, we hypothesize that:

H1: General attitude toward training will be positively and significantly correlated to training motivation.

Self-efficacy

Definition

Self-efficacy is a construct that has been widely studied (Salas & Bowers, 2001) and that is considered as important for training preparation and training outcomes. Research over the last two decades indicates that self-efficacy, acquired before or during training, leads to more motivation to learn and better learning outcomes (Salas et al., 2012).

The concept of self-efficacy is based on social learning theory and has been defined by Bandura (1986) as “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has but with judgments of what can one do with whatever skills one possesses” (p. 391). In brief, self-efficacy is a perception of one’s capability to successfully perform specific tasks and behaviors.

As it can be seen, the concept of self-efficacy is vast. One can feel self-efficient toward many different things. Thus, it is important to determine what kind of self-efficacy one is concerned about. In this study we narrowed the general concept of ‘self-efficacy’ to ‘training self-efficacy’ and we defined training self-efficacy as a trainees’ belief on how well they can perform in the given training or how confident and self-efficient they feel to successfully complete it.

Link with training motivation

The research literature consists of studies that consistently show strong and positive correlations between self-efficacy and training motivation. In their study Warr and Bunce (1995) found a positive and significant correlation between learning self-efficacy and specific motivation ($r=.49$). In their meta-analysis Colquitt et al. (2000) found that self-efficacy had a strong relationship with motivation to learn ($r=.42$). Quinones (1995) showed in their research that trainee' self-efficacy significantly increased training motivation as did Carlson et al. (2000), Tracey et al. (2001), and Chiaburu and Marinova (2005). For our study we hypothesize that:

H2: Self-efficacy will be positively and significantly correlated to training motivation.

Career planning

Definition

Colquitt et al. (2000) defined career planning as “the extent to which employees create and update clear, specific plans for achieving career goals” (p. 679). Gould (1979) underlined that career planning could lead to more effective careers and therefore, a more committed workforce. Mathieu, Martineau, and Tannenbaum (1993) followed suit to suggest that individuals who engaged in career planning saw more potential benefits to training. In their meta-analysis on training motivation Colquitt et al. (2000) found that career variables including career planning and career exploration were positively linked to variety of outcomes such as training motivation, reactions, post-training self-efficacy, transfer, and job performance. Surprisingly, the studies on career variables are limited (Colquitt et al., 2000) and for this reason we decided to include career planning variable in our study. Our goal was to help to expand and contribute to a better understanding of this variable and its effects on other variables, particularly training motivation and trainees' reactions.

Link with training motivation

Career planning is an understudied variable in psychological literature and empirically the results of career planning and training motivation are not very sanguine. Mathieu et al. (1992) and Noe and Schmitt (1986) failed to show a significant relationship between training

motivation and career planning. However, in one of the studies the sample was very small (N=44; Noe & Schmitt, 1986) and in the other, the study was conducted with university employees that completed a proofreading training (Mathieu et al., 1992). Perhaps such training was not associated with career goals. On the other hand, Facticeau et al. (1995) had a sample of 967 supervisors and managers in an organizational setting and thus found support for a positive and significant relationship between career planning and training motivation ($r=.28$, $p<.05$). Colquitt et al. (2000) with their meta-analysis also confirms that career planning moderately correlates to motivation to learn ($r=.36$). Given these points, in this study we expect to find that:

H3: Career planning will have a positive and significant correlation with training motivation.

Post-training variable

According to Saks and Haccoun (2013), Kirkpatrick's (1967) model of training evaluation is the most popular model in use today, and it is the measure routinely used in training evaluation conducted in practice. Patel (2010) claimed that over 90% of organizations surveyed measured trainees' reactions in order to evaluate their trainings. Moreover, reaction evaluation is very often the only form of evaluation that is undertaken by organizations (Giangreco et al., 2009). Trainees' reactions are an important variable to consider in research and thus, it was chosen as a dependent variable in this study.

Trainees' Reactions

Definition

In his book, Spector (2008) described job satisfaction as "the extent to which people like their jobs". If applied to training context, it could also be said that training satisfaction is the extent to which people like their training. Kirkpatrick (1967) and Alliger and Janak (1989) defined *trainees' reactions* as attitudinal measures or 'liking of and feelings for a training program'. Warr and Bunce (1995) and Warr, Alan, and Birdi (1999) expanded the concept of reactions by defining them as multidimensional concept and claiming that reactions are of four kinds: enjoyment, perceived usefulness, difficulty and motivation to transfer. The authors

portrayed ‘enjoyment’ as enjoying the training activity, ‘utility’ as perceived usefulness for one’s job, ‘difficulty’ as perceptions of trainee on how difficult is the course, and ‘motivation to transfer’ as willingness to use material covered in programme. For this study, we also considered trainees’ reactions as multidimensional concept which includes more aspects than a simple enjoyment of a training program.

Links between pre-training variables and trainees’ reactions

Positive reactions may influence an individual’s willingness to use new knowledge and to attend future training programs. According to Tracey et al. (2001) satisfaction with training will lead to learning which will lead to behavior change and as a result, better training outcomes will be achieved. Thus, outcomes of training and its evaluation are increasingly seen as crucial. In order to know how to improve training outcomes, it is important to know what affects it most. This study chose to explore four pre-training variables (general attitude toward training, training self-efficacy, career planning, training motivation) and their impact on trainees’ reactions.

Mathieu and Martineau (1997) stated that a key determinant of training effectiveness is training motivation and quite a few authors researched motivation and its relationship with outcome variables. A correlation between specific training motivation and different dimensions of trainees’ reactions were reported by Warr and Bunce (1995); the study found that specific motivation correlated strongly with enjoyment ($r=.53$) and usefulness ($.59$). Tai (2006) found that training motivation strongly correlated with utility reactions ($r=.44$, $p<.01$) and transfer motivation ($r=.47$, $p<.01$). A strong relationship between training motivation and training satisfaction ($r=.61$) was also found by Orvis et al. (2009). Consistent with that literature hypothesis 7 is proposed:

H4: Training motivation will correlate positively and significantly with trainees’ reactions.

The link between general attitude toward training and trainees' reactions has rarely been explored. Only one study of Warr and Bunce' study (1995) has been found to look at the link between these two concepts. The authors hypothesised that individuals with high training motivation would have a generally positive view of training and therefore be more likely to react positively to the training environment. In their study, they discovered that general attitude correlated moderately to reaction of enjoyment ($r=.28$) and usefulness ($r=.36$), but weakly to reaction of difficulty ($r=.05$). Although there are scarce findings to base our hypothesis on, we can still expect that in our study:

H5: General attitudes toward training will be positively and significantly correlated to trainees' reactions.

Colquitt et al. (2000) in their meta-analysis confirmed that there is an evident correlation between self-efficacy and training reactions even if it was a weak one ($r=.17$). Warr and Bunce (1995) found weak correlations between learning self-efficacy and enjoyment ($r=.21$), and between self-efficacy and utility ($r=.12$). Several other authors have also shown that self-efficacy correlates to trainees' reactions, but those correlations are either moderate or weak (Carlson et al., 2000; Chiaburu & Marinova, 2005; Mathieu, Martineau, and Tannenbaum (1993); Quinones, 1995). Considering the former findings, our next hypothesis states that:

H6: A positive correlation will exist between self-efficacy and trainees' reactions.

Chamberlain et al. (2012) found that career planning seminars correlated with the greatest increase in medicine-pediatrics graduates' satisfaction, and thus concluded that career planning is often overlooked, but it should not be as exposure to it leads to significant changes in trainee satisfaction. Just like Chamberlain et al. (2012), Colquitt et al. (2000) has stated twelve years before that studies including career variables are limited. On the positive side, Colquitt et al. (2000) meta-analysis report that career planning was positively, but weakly correlated to a variety of outcomes, including training motivation and reactions ($r=.12$). Basing ourselves on this single finding Hypothesis 7 states that:

H7: Career planning will have a positive correlation with trainees' reactions.

Motivation as a mediator between pre- and post-training variables

According to Baron and Kenny (1986), “a given variable may be said to function as a mediator to the extent that it accounts for the relation between the predictor and the criterion”. In this study, pre-training motivation is hypothesized to function as a mediating variable. Thus, a causal sequence is implied in which an antecedent (i.e., general attitude toward training or training self-efficacy or career planning) anticipates and directly affects the mediating variable (i.e., training motivation). The mediator has then a direct effect on the consequences (i.e., post-training reactions). That is to say, training motivation is a hypothesized process variable to explain how general attitude toward training influences trainees’ reactions. As it has been shown above, this causal order is consistent with previous research on general attitude toward training and training motivation (Carlson et al., 2000; Warr & Bunce, 1995) and leads us to the following hypothesis:

H8a: Training motivation will mediate the relationship between general attitude towards training and trainees’ reactions.

As it has been previously noted, pre-training motivation affects trainees’ reactions (Orvis et al., 2009; Tai, 2006) while training motivation itself is influenced by self-efficacy (Chiaburu & Marinova, 2005; Colquitt et al., 2000; Tracey et al., 2001) and this allowed us to hypothesize that:

H8b: Training motivation will mediate the relationship between self-efficacy and trainees’ reactions.

Training motivation is finally a hypothesized mediating variable to explain how career planning influences trainees’ reactions. This causal order is consistent with research discussed in previous section on career planning and training motivation (Colquitt et al., 2000; Facticeau et al., 1995) and thus we hypothesize that:

H8c: Training motivation will mediate the relationship between career planning and trainees' reactions.

Figure 2 sketches the mediation hypothesis.

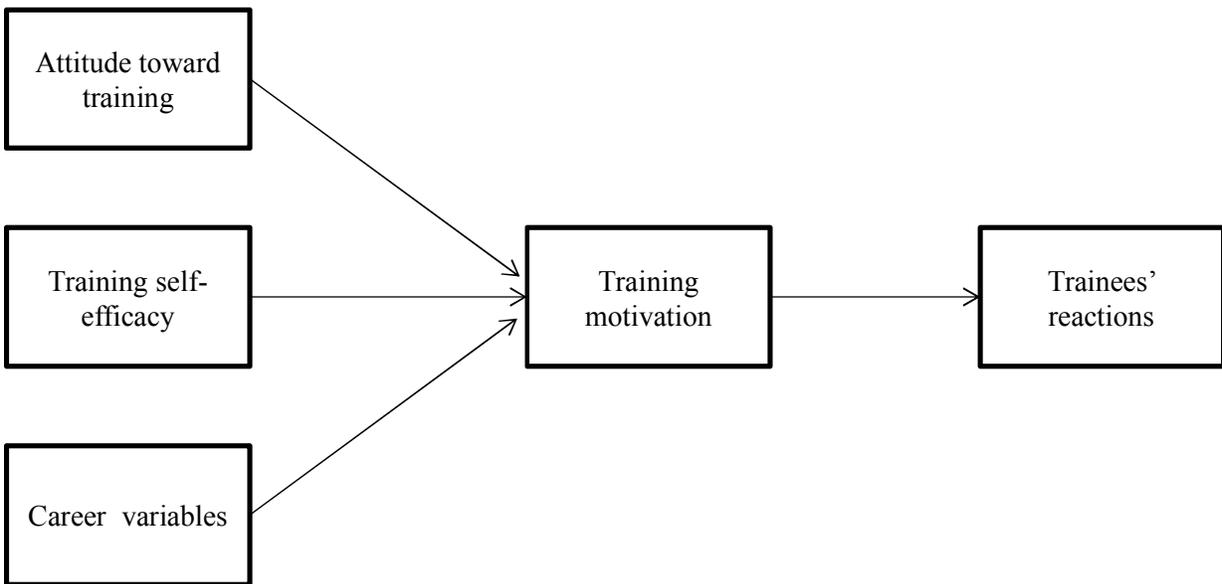


Figure 2: A model of hypotheses showing the four potential relationships between training motivation with dependent and independent variables.

Next chapter will discuss how information was collected and what instruments were used in order to measure pre-training and post-training variables of this study.

METHODS

Participants

This study was conducted in a large transportation company with over nine thousand employees. The company's large training department organizes numerous training sessions that are delivered throughout the year for its employees.

A total of 152 employees participated in the present study. Of these trainees 66.4% were male and 32.3% were female; two (1.3%) participants did not to reveal their gender. Employees' age ranged from 21 to 59 years old with the mean and mode being 42 years. Participants came from different educational backgrounds: 18% held a university degree, 36% had college diplomas and the remainder (46%) had a high school diploma. In terms of a position within the company, the largest portion of participants (91%) was regular (non-managerial) staff, 7% of participants held a supervisor position and 2% were managers.

Training Program

The questionnaires were distributed during different training programs, and there were two major groups that those programs could be divided to: one group of training programs was designated to new employees and other group to permanent staff.

Training programs designated to new employees were one month long. They had theoretical (learning about organization, possible situations on the job, etc.) as well as practical component (visiting the work place, meeting other employees and supervisors, etc.). At the end of the training the new employees had to pass an exam testing what they learned during the program. After succeeding the exam, new employees were paired with an experienced employee for one month before working in the position by themselves.

Another aspect of training programs was designated to permanent staff and their development on the job. Developmental training programs duration varied from some lasting just half a day to some others a few weeks. The training programs for the permanent staff were designed to either improve their performance on the job or learn a new skill. Some examples of such training programs would be: preventive driving, introduction to new software, and improving informatics skills.

Altogether, questionnaires were delivered to eight orientation programs and thirty-five developmental programs. All of these training programs were obligatory to the employees.

Design

A few minutes before the training program began, respondents were asked to read carefully and sign the consent form if they agreed to participate in the two questionnaires. After the consent forms were signed and collected by the researcher, the first questionnaire was delivered to the trainees. The questionnaire tapped into four pre-training themes: general attitude toward training, training self-efficacy, career planning, and pre-training motivation. On average, it took trainees 10-20 minutes to fill out 26-item questionnaire. After participants completed the questionnaires, the researcher gathered them and put them into a sealed envelope.

The second questionnaire was distributed right after the employees finished the training course. This questionnaire held 12 items which focused on post-training variable and measured immediate trainees' reactions. It took trainees 5-10 minutes to fill out the questionnaires. After the questionnaires were completed, they were gathered by researcher and put into a sealed envelope.

Measures

Questionnaires used for this study were combined from different scales of different questionnaires shown in Appendix A. For both questionnaires the responses were measured on the Likert scale from 1-Strongly Disagree to 5-Strongly Agree. Both questionnaires were translated from English to French and from French back to English in order to assure its validity. All participants in the study, who completed the consent form, received two French questionnaires: one before the training program began and one after the training program was finished (Appendix B).

The first questionnaire consists of 26 items and measures the variables of general attitude toward training, training self-efficacy, career planning and training motivation. The second questionnaire includes 12 items and measures trainees' reactions and expected support. Even though 'expected support' items were included in the second questionnaire, they will not be used for this present study.

Following are the measures of variables used for this study:

Pre-training variables

General attitude toward training

As has been noted in order to talk about attitudes it is important to specify what kind of attitudes the one is referring. In like manner, when one speaks about measurement of attitudes, it is important to define towards what object the attitudes are measured. In this study, we chose general attitude towards training. An ideal way to assess general attitude toward training would be a scale measuring different dimensions of the concept (affective aspects, cognitions, behavioral information), but to our knowledge no such scale exists at present. There are a couple of scales that were found that attempt to measure general attitude toward training. One of them is a scale of Warr and Bunce (1995) and the other is a scale of Schmidt (2007). Warr and Bunce's scale was based on previous studies and pilot investigations and includes 5 items of general attitude to training. Schmidt's scale was based in a pilot study (N=118) and included four items of employee feelings about training.

To measure the emotions or attitudes about training in this study the items were taken from Job Training and Job Satisfaction Survey of Schmidt (2007). Examples of general attitude items would be "I view my education on-the-job as a continuous, lifelong endeavour" or "I am proactive in seeking ways to improve what I do".

Overall alpha of .61 was reported for the four attitude items by Schmidt (2007). This is not a very high overall alpha, but scales for general attitude toward training are limited and a different scale for this variable could not be obtained.

Self-efficacy

When measuring self-efficacy, researchers typically ask individuals whether they can perform at specific levels on a specific task and ask for a degree of confidence in that endorsement at each specific performance level (Lee & Bobko, 1994). There are three most common methods of measuring self-efficacy. The first most common method is measuring self-efficacy strength. The second most common method is measuring self-efficacy level of magnitude. A third possibility is using a combination of both. According to the results of Lee and Bobko (1994) the measure of choice should be a combination of both magnitude and strength composites.

A self-efficacy scale has to be task specific and relate to performance of specific behaviours and measures of self-efficacy must be tailored to the domain of psychological functioning being explored (Bandura, 1986). This study was looking specifically into training self-efficacy. Thus, a self-efficacy scale of Guerrero and Sire (2001) measuring self-efficacy in training context was our measure of choice. Examples of training self-efficacy from this scale would be “I have good learning abilities” or “I am able to follow even if the trainer goes quickly”. The overall alpha of items used for training self-efficacy scale was reported as .81.

Career planning

The research on career planning is limited in psychology literature and measures of career planning are not extensive either. A scale that is available and has been used by other authors is the six-item Gould’s (1979) scale of career planning. This scale has been used to measure career planning in our sample as well.

Gould (1979) scale taps into the extent to which career plans exist, how frequently career plans are changed, and whether or not a strategy exists for achieving career goals. Some examples of career planning items would be: “I have a plan for my career” or “I change my career objectives frequently” (a reversed item). Gould (1979) reported a high alpha coefficient of .80 for his career items.

Training motivation

The concept of training motivation concept has received a lot of attention in the last decade (Colquitt et al., 2000; Kozlowski & Salas, 2010), but according to Zaniboni et al. (2011) much less research has been devoted to the actual measurement of training motivation. For this reason Zaniboni et al. (2011) not only validated a multidimensional training motivation scale, but also adapted it to the training context.

There have been many different ways of measuring training motivation in the industrial/organizational psychology field. Noe and Schmitt (1986) developed an 8-item scale to assess motivation to learn. Noe and Wilk (1993) employed a 17-item scale to tap into motivation to learn in developmental activities. Warr and Bunce (1995) created 12 items for specific motivation for the training program and, later on, Warr et al. (1999) used a 6-item scale to measure trainees’ motivation to learn. All things considered, Vroom’s (1964)

expectancy theory model has still been used most frequently and has been proven most useful for studying training motivation (Baldwin & Ford, 1988; Colquitt & Simmering, 1998; Mathieu & Martineau, 1997; Mathieu et al., 1992; Smith, Jayasuriya, Caputi, & Hammer, 2008; Tannenbaum, Mathieu, Salas, & Cannon-Bowers, 1991; Tharenou, 2001). According to these findings Vroom's VIE model should be a measure of choice for training motivation. As a result, this study used Zaniboni et al.'s (2011) scale to measure training motivation. This scale bases itself on the three subscales (valence, instrumentality, expectancy) that were adjusted from original Truxillo and Weathers' (2005) measure and validated in order to fit the general training context. Examples of some training motivation items would be: for *valence*: "I think it's important to learn new things from training activities", for *instrumentality*: "Usually I am able to apply to my job what I learn in training activities", for *expectancy*: "If I am involved in training activities, I am confident I can master aspects of my job".

The composite reliabilities of Zaniboni et al. (2011) scale were .86 for valence scores, .78 for instrumentality scores, and .89 for expectancy scores.

Post-training variable

Trainees' Reactions

Measurement of trainees' reactions has been evolving just like the concept itself. At first, immediate reactions were measured as attitudinal measures by using Kirkpatrick model's first step of evaluation – reactions. Reactions used to simply refer to trainees' satisfaction with the training experience or in other words liking or disliking of the training (Alliger & Janak, 1989; Spector, 2008). Like so, trainees' reactions were measured in one-dimension only.

Later on, Warr and Bunce (1995) expanded the concept to include enjoyment, perceived usefulness, and difficulty of training. They claimed that measures of these sub dimensions of reaction measures produce a better understanding of training effectiveness. Meta-analysis of Alliger et al. (1997) supported this view and showed that affective reactions (enjoyment) is a poor predictor of training effectiveness while utility measures (usefulness) are significant improvement. Nevertheless, Alliger et al. (1997) excluded the third concept of reactions – *difficulty* – saying that this concept has been rarely researched with trainees.

In their later article, Warr, Allan and Birdi (1999) proposed yet another dimension of trainees' reactions - *motivation to transfer*. The authors claimed that an increase of participant's willingness to use material covered in training program is often a principal aim of many training courses. Thus, motivation to transfer is another important affective dimension at the end of training that deserves consideration.

To sum up, it seems that to measure only trainees' enjoyment with training is not enough and it is important to include utility measures as well. Motivation to transfer also seems as an important addition to reactions as it measures the willingness of trainee to use learned material. In contrast, reaction of difficulty had weak to moderate correlations with pre-training variables and according to Alliger et al. (1997) perceived difficulty is rarely researched with trainees. Seeing that perceived difficulty reaction is rarely used and is also a weak predictor, it is not seen as an essential element to trainees' reactions. Enjoyment, utility and motivation to transfer, on the other side, have been considered as important dimensions to include into measurement of trainees' reactions. Given these points, trainees' reactions variable in this study was assessed by items from Warr et al. (1999) questionnaire. The 'enjoyment' is assessed by items 1, 2, and 3 in the second questionnaire and these items have an overall alpha of .76. An example of an enjoyment items would be: "I really enjoyed this course". 'Perceived usefulness' is also assessed by three items (items 4, 5, and 6) in the second questionnaire and the overall alpha of these items is .80. An example of one of the perceived usefulness items would be: "This course was closely related to my job needs. The 'motivation to transfer' is assessed by items 7, 8, and 9 in the second questionnaire and the reported alpha of these items is .79. An example of motivation to transfer items would be: "I am keen to apply what I have learned on this course".

Procedure

This study's subject and purpose was presented by the researcher a few minutes before each training session. Employees were assured of the confidentiality and anonymity of their responses if they participated in the study, and invited to participate on a voluntary basis. The consent form was distributed and explained, and after the first questionnaire was administered to trainees willing to participate in the study. When the consent forms were signed and

questionnaires were completed, everything was placed in a sealed envelope and returned directly to the researcher.

At the end of each training course, the researcher gave the second questionnaire to the same participants. After the second questionnaires were completed, they were put in a sealed envelope and returned directly to the researcher.

The first questionnaires were matched with the second ones. To match the questionnaires and insure participants' anonymity and confidentiality, trainees were asked to give only the day of their birth and three first letters of their mothers' and than their fathers' names (Appendix B). The same thing was asked of participants in the second questionnaire and this allowed the follow-up of pre-training and post-training questionnaires.

The following section will test the hypotheses and will discuss the statistical findings of this study.

RESULTS

Preliminary Analysis

Preliminary analyses showed that less than 5% of data was missing for all variables. Data screening confirmed that there are no values that are out of range for any of the variables. All means and standard deviations are plausible. The alphas of reliability of the scales are at acceptable levels except general attitude toward training which has a weaker alpha of .62. Table 1 shows N, means, standard deviations, alphas, and the intercorrelations for all variables.

Table 1 depicts the correlations between independent variables and trainees reactions which range from a low .15 to .64, and except for the correlation between career planning and trainees reactions ($r = .15$), they are all statistically significant and in the expected directions.

Table 1

Number of participants (N), Means, Standard Deviations (S.D.), Alpha Coefficients and Correlations among Attitudes, Self-Efficacy, Career, Motivation and Trainees Reactions

	<i>N</i>	Mean	S.D.	1.	2.	3.	4.	5.
1. Attitude to training	152	4.21	.60	<u>.62</u>				
2. Self Efficacy	152	3.85	.60	.19*	<u>.77</u>			
3. Career planning	152	3.87	.81	.28**	.31**	<u>.88</u>		
4. Training Motivation	152	4.34	.57	.64**	.33**	.34**	<u>.93</u>	
5. Trainees' reactions	152	4.36	.52	.43**	.17*	.15	.47**	<u>.88</u>

* $p < 0.05$; ** $p < 0.01$; alpha coefficients are underlined

Factorial Analysis

In order to confirm their multidimensionality, items of training motivation and trainees' reactions were submitted to factorial analyses.

Training motivation

The 10 items (items 17 to 26 in the first questionnaire) of training motivation were submitted into principal component analysis (PCA) in order to see if the three subscales suggested by Zaniboni et al. (2011) could be extracted for our particular sample. Prior to performing PCA, suitability of items for factor analysis was assessed. The correlation matrix reveals that all the coefficients have coefficients higher than .3. The Kaiser-Meyer-Olkin (KMO) is .92, exceeding the recommended value of .6 of Kaiser (1970, 1974) and Bartlett's Test of Sphericity (Barlett, 1954); the KMO value reaches statistical significance ($p < .001$) supporting the factorability of the correlation matrix. Principal component analysis for training motivation items reveals the presence of only one component in our sample and not three as suggested by Zaniboni et al. (2011). This single component explains 62.89% of total variance in the variable and has an internal consistency of .93. Under those circumstances, training motivation variable was treated as a one-dimensional variable in our hypotheses testing.

Trainees' Reactions

The nine items of trainees' reactions were also submitted to principal component analysis. Correlation matrix revealed that all coefficients were higher than .3 and that KMO and Barlett's test value was .86 which exceeds the required value of .6. Principal component analysis revealed that only one factor is extracted for our sample instead of three distinct ones (enjoyment, perceived usefulness, and motivation to transfer) found by Warr et al. (1999). Trainees' reactions factor explains 54.69% of total variance in the variable and its internal consistency is .88. As a result, trainees' reactions were be used as a one-dimension variable in our hypothesis testing.

Hypotheses Testing

Simple correlations

H1: General attitude toward training will be positively and significantly correlated to training motivation.

Hypothesis 1 stated that there will be a positive and significant correlation between general attitude toward training and training motivation. Analyses showed that a strong correlation exists between these variables ($r = .64$, $p < .01$) which supports hypothesis 1. If trainees have a positive general attitude towards training, they will have a higher training motivation as well.

H2: Self-efficacy will be positively and significantly correlated to training motivation.

Hypothesis 2 stated that a correlation will exist between self-efficacy and training motivation. This correlation was found to be positive and significant ($r = .33$, $p < .01$), and therefore, hypothesis 2 is supported. The more self-efficient trainees feel before the training, the more they are motivated for the given training.

H3: Career planning will have a positive and significant correlation with training motivation.

Hypothesis 3 explored if a correlation exists between career planning and training motivation. We found a positive and significant correlation between these two variables ($r = .34$, $p < .01$); hypothesis 3 is confirmed. It can be stated that trainees who have a plan for their career have higher training motivation.

H4: Training motivation will correlate with trainees' reactions.

Hypotheses 4 stated that training motivation will correlate with trainees' reactions. This hypothesis was supported as we found positive and significant correlations between these two variables ($r = .47$, $p < .01$). Trainees that have more positive training motivation also have more positive reactions.

H5: General attitudes toward training will be positively correlated to trainees' reactions.

The fifth hypothesis stated that attitude will be positively correlated to trainees' reactions. To test this hypothesis a simple correlation between these variables was calculated. The resulting correlation between attitude toward training and trainees' reactions was positive and significant ($r = .43$, $p < .01$). Hypothesis 5 is therefore supported - the more positive is the trainees' general attitude towards the training, the more likely they are going to be satisfied with their training program.

H6: A positive correlation will exist between self-efficacy and trainees' reactions.

The sixth hypothesis claimed that there will be a correlation between self-efficacy and trainees' reactions. A correlation of .17 ($p < .05$) was found between these variables supporting this hypothesis. Even if the correlation was a bit weak in our sample, it can still be said that trainees that feel more self-efficient are also more satisfied with the training.

H7: Career planning will have a positive correlation with trainees' reactions.

Hypotheses 7 expected a correlation between career planning and trainees' reactions. The correlation between career planning and trainees' reactions was not significant in our study ($r = .15$, not significant). Hypothesis 7 was rejected meaning that there is no detectable relation in this data set between career planning and training satisfaction.

It can be concluded that the first step of our analyses is completed as we found positive and significant correlations between our proposed variables. As all the correlations between our variables are significant (except correlation between career planning and training satisfaction) and in expected directions, we will next look for simple predictions between our variables.

Simple predictions

Predicting training motivation

Simple regression analysis showed that general attitude towards training was a good predictor of training motivation ($R^2 = .41$, $F(1, 150) = 105.83$, $p < .001$). This indicated that 41% of training motivation variance was explained by general attitude towards training. In other words, trainees that had a higher score on general attitude towards the training had a 41% higher chance to be more motivated for the training.

Self-efficacy predicted training motivation ($R^2 = .11$, $F(1, 150) = 18.22$, $p < .001$), and 11% of variance in training motivation was accounted by self-efficacy. Employees who had higher training self-efficacy had a higher training motivation as well.

Simple linear regression analysis showed that career planning predicted training motivation ($R^2 = .12$, $F(1, 150) = 19.41$, $p < .001$), and 12% of variance in training motivation was explained by it. Trainees that had a plan or objectives for their career had higher training motivation than trainees who were less concerned with their careers.

Multiple regression analysis revealed that when taken all together, general attitudes towards training, self-efficacy and career planning explain 47% of variance in training motivation ($F(3, 148) = 43.88$, $p < .001$) with general attitude toward training being the strongest predictor of training motivation ($\beta = .575$, $p < .001$). As it can be seen in Table 2, career planning in multiple regression analysis did not predict training motivation anymore as it did in simple regression. This means that career planning does not add anything to the prediction of training motivation when it is put in the common model with general attitude toward training and training self-efficacy.

Variance Inflation Factor (VIF) of attitude, self-efficacy and career planning fell closely around one indicating that there is no multicollinearity among those three predicting variables.

Table 2 shows unstandardized coefficients (B), standardized coefficients (β), significance levels and VIF of general attitude towards training, training self-efficacy and career planning.

Table 2

Multiple Regression Analysis Summary of Predicting Training Motivation (N = 151)

Variable	B	Beta	Sig.	VIF
Attitude	.550	.575	.000	1.101
Self-Efficacy	.178	.185	.004	1.117
Career	.084	.118	.069	1.173

Note. R square = .47; $F(3, 148) = 43.88, p < .001$

Predicting trainees' reactions

Simple linear regression analysis showed that training motivation predicted well trainees' reactions ($R^2 = .224, F(1, 150) = 43.2, p < .001$) and explained 22.4% of variance in the dependent variable. Thus, training motivation was the best predictor of trainees' reactions in our model. Under those circumstances, employees that had higher training motivation before training also had higher training satisfaction after training.

Simple linear regression analysis also showed that general attitude towards training predicted trainees' reactions ($R^2 = .18, F(1, 150) = 33.22, p < .001$) and was the second best predictor of reactions in our model. Thus, 18% of variance in trainees' reactions was explained by trainees' general attitude towards training. Trainees that had a more positive general attitude towards training were more satisfied with the training that they received.

Linear regression analysis also confirmed that trainees' reactions were predicted slightly, but significantly by self-efficacy ($R^2 = .03, F(1, 150) = 4.21, p < .05$). This means that 3% of variance in trainees' reactions was explained by self-efficacy. Trainees who had higher score on training self-efficacy before training were more likely to have a higher score on training satisfaction after training.

Regression analysis cannot be run between career planning and trainees' reactions as these variables do not correlate between each other in our particular sample.

General attitudes towards training, training self-efficacy, career planning and training motivation taken together explained 25% of total variance in trainees' reactions ($F(4, 147) =$

12.27, $p < .001$). Multiple regression analysis showed that training motivation had the highest beta weight ($\beta = .34$, $p < .001$) and was therefore the strongest predictor of trainees' reactions ($R^2 = .224$, $F(1, 150) = 43.2$, $p < .001$). The second best predictor of trainees reactions was trainees' general attitudes towards training ($\beta = .21$, $p < .05$) and the other two variables (training self-efficacy and career planning) were not statistically significant when put into the multiple regression model.

Table 3 shows standardized coefficients (β), significance levels, tolerance and VIF (Variance Inflation Factor) for general attitude towards training, training self-efficacy, career planning and training motivation.

Table 3

Multiple Regression Analysis Summary Predicting Trainees' Reactions (N = 151)

Variable	β	Sig.	Tolerance	VIF
Attitude	.208	.025	.580	1.725
Self-Efficacy	.016	.750	.846	1.182
Career planning	-.380	.631	.834	1.199
Training motivation	.334	.001	.529	1.889 ¹

Note. R square = .25; $F(4, 147) = 12.27$, $p < .001$

¹ Attitude and motivation variables have VIF values much higher than 1. It indicates that multicollinearity exists between the variables. Taking into consideration these circumstances, secondary re-analyses are presented in Appendix C.

Mediation

In order to prove mediation the following steps have to be shown to be true:

- 1) Independent variable (IV) has to predict the mediator;
- 2) Mediator has to predict dependent variable (DV);
- 3) Independent variable (IV) has to predict dependent variable (DV)
- 4) When IV and mediator are put into the prediction model together previously significant correlation between IV and DV is either decreased (partial mediation) or reduced to zero (full mediation).

H8a: Training motivation will mediate the relationship between general attitude towards training and trainees' reactions.

Hypothesis 8a stated that training motivation will mediate the relation between general attitude towards training and trainees' reactions. As previously shown, attitude toward training predicts training motivation (1), training motivation predicts reactions (2) and attitude toward training predicts reactions (3). As all predictions are significant, mediation analyses are performed next (4). General attitude towards training and training motivation together predict trainees' reactions ($R^2 = .25$, $F(2, 149) = 24.68$, $p < .001$). Beta coefficient ($\beta = .43$, $p < .001$) of general attitude towards training is smaller and significant in multiple regression ($\beta = .21$, $p < .05$). Thus, training motivation mediates partially the relationship between general attitude towards training and trainees' reactions (Figure 3). Hypothesis 8a is confirmed. Trainees that were satisfied with their training had positive attitudes towards training and higher training motivation.

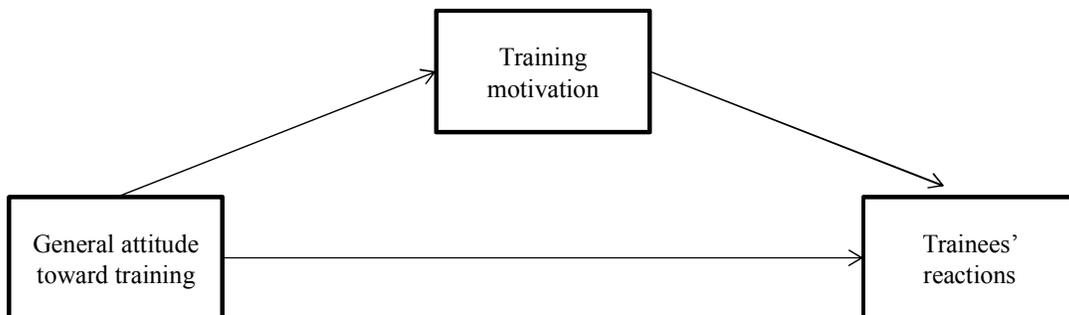


Figure 3 : Partial mediation of training motivation between general attitude toward training and trainees' reactions.

H8b: Training motivation will mediate the relationship between self-efficacy and trainees' reactions.

As previously shown, training self-efficacy predicts training motivation (1), training motivation predicts reactions (2) and training self-efficacy predicts reactions (3). As all predictions are significant, mediation analyses are performed next (4). Self-efficacy and training motivation together predict trainees' reactions ($R^2 = .22$, $F(2, 149) = 21.47$, $p < .001$). Beta coefficient ($\beta = .17$, $p < .05$) of self-efficacy is smaller and non-significant in multiple regression ($\beta = .01$, ns). In other words, the pathway between self-efficacy and trainees' reactions is reduced to zero while training motivation is controlled. This illustrates that training motivation completely mediates the pathway between training self-efficacy and trainees' reactions (Figure 4). Hypothesis 8b is confirmed. If trainees are motivated their self-efficacy is no more explaining trainees' reactions.

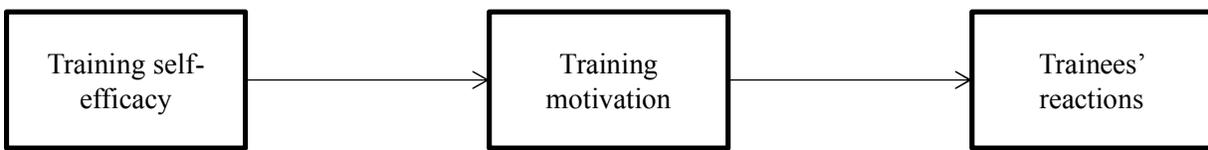


Figure 4: Complete mediation of training motivation between training self-efficacy and trainees' reactions.

H8c: Training motivation will mediate the relationship between career planning and trainees' reactions.

Hypothesis 8c states that training motivation will mediate the relationship between career planning and trainees' reactions. As shown before, career planning predicts training motivation (1), motivation predicts reactions (2), but career planning does not predict reactions. Thus, mediation analyses cannot be performed between these variables. Hypothesis 8c is rejected.

Additional explorations

In this sample a proportion of participants were new employees (44) - individuals who have worked less than three month (probation period) in the current position - as well as permanent employees (108) – individuals who were in their position longer than three months. New employees or newcomers were following orientation training as the permanent employees had continuous training sessions. Independent t-tests were conducted to compare the scores of newcomers and other employees.

The results of the analyses (Table 4) show that there was no significant difference between the two means of self-efficacy between the two groups meaning that newcomers ($M=3.88$, $SD=.57$) and other employees ($M=3.83$, $SD=.61$; $t(147) = -.45$, $p = .67$, two-tailed) do not differ significantly in their pre-training self-efficacy scores; the magnitude of the differences between the means of two groups (mean difference = $-.05$, 95% CI: $-.26$ to $.16$) was very small (eta squared = $.001$). However, results also show that there is a significant difference between the general attitude toward training scores for newcomers ($M=4.51$, $SD=.39$) and other employees ($M=4.09$, $SD=.63$; $t(126) = -4.86$, $p<.01$, two-tailed). With mean difference of $.42$ (95% CI: $-.58$ to $-.25$) the effect size is quite large (eta squared = $.14$). This means that newcomers come to the training program with much higher general attitude towards training than permanent employees. From this and our findings before we could already predict that newcomers' training motivation and training satisfaction scores will be higher than those of permanent employees. Indeed, a significant difference was found between new employees ($M=4.63$, $SD=.38$) and other employees ($M=4.22$, $SD=.60$; $t(123) = -4.91$, $p<.05$, two-tailed) on training motivation with a large effect size (eta squared = $.14$; mean difference = $.40$, 95% CI: $-.57$ to $-.24$). The difference was significant between newcomers ($M=4.04$, $SD=.94$) and other employees ($M=3.78$, $SD=.74$; $t(66) = -1.61$, $p<.05$, two-tailed) concerning career planning. The difference magnitude between the two means (mean difference = $.26$, 95% CI: $-.57$ to $.06$) has a small effect (eta squared = $.02$). New employees in our sample were more likely to have career plans or objectives than permanent employees.

Results also showed that there is a significant difference in training satisfaction scores for newcomers ($M = 4.67$, $SD = .32$) and other employees ($M = 4.21$, $SD = .54$; $t(129) = -6.39$, $p<.001$, two tailed), and the magnitude of the difference in the means (mean difference =

.46, 95% CI: -.60 to -.31) was quite large (eta squared = .22). Newcomers have higher general attitude toward training, higher training motivation and as a result, higher training satisfaction.

Table 4

Mean differences between new and permanent employees

Variable	Mean		SD		Sig.	Effect size
	New	Permanent	New	Permanent		
Attitude	4.51	4.09	0.39	0.63	0.01	0.14
Self-efficacy	3.88	3.83	0.57	0.61	ns	0.001
Career planning	4.04	3.78	0.94	0.74	0.05	0.02
Training motivation	4.63	4.22	0.38	0.6	0.05	0.14
Trainees' reactions	4.67	4.21	0.32	0.54	0.001	0.22

Note. ns = not significant SD = standard deviation

In summary, new employees following orientation training had higher mean scores on general attitude towards training, career planning and training satisfaction, but the scores on training self-efficacy did not differ between the two groups.

In order to understand the differences between the new and permanent employees it is not enough to compare their mean scores on the variables. Thus, further regression analyses were executed.

Regression analysis and mediation comparing new and permanent employees

In order to see if the predictions for new and permanent employees differ, multiple regression analyses were re-run by using two different groups. One group took into consideration only new, or not yet permanent, employees who were in their position less than three months. The other group consisted of permanent employees or employees who were in their position longer than three months. Regression analyses of these two different groups are presented in Table 5 for predicting training motivation and Table 6 for predicting trainees' reactions.

Table 5

Predicting Training Motivation for New (44) and Permanent (108) Employees

Variable	R ²		β		Sig.		VIF	
	New	Perm.	New	Perm.	New	Perm.	New	Perm.
Attitude	0.144	0.401	0.379	0.633	0.009	0.001	1.103	1.117
Self-efficacy	0.083	0.148	0.288	0.384	0.052	0.001	1.352	1.089
Career planning	0.032	0.141	0.179	0.376	0.234	0.001	1.458	1.103

Note Perm. = Permanent

Table 6

Predicting Trainees' Reactions for New (44) and Permanent (108) Employees

Variable	R ²		β		Sig.		VIF	
	New	Perm.	New	Perm.	New	Perm.	New	Perm.
Attitude	0.105	0.109	0.324	0.331	0.028	0.001	1.303	1.701
Self-efficacy	0.008	0.037	0.089	0.192	0.556	0.051	1.507	1.172
Career planning	0.009	0.006	0.092	0.078	0.541	0.432	1.471	1.182
Training motivation	0.254	0.135	0.504	0.367	0.001	0.001	1.297	2.001

Note Perm. = Permanent

New employees

As evidenced in Table 5 and Table 6 above, new employees' attitude toward training predicts their training motivation, training motivation predicts reactions, and attitude toward training predicts reactions. Taken together, attitude toward training and training motivation predict trainees' reactions ($R^2 = .28$, $F(2, 43) = 8.16$, $p < .001$), but in a multiple regression model attitude toward training variable's beta ($\beta = .324$, $p < .05$) is smaller ($\beta = .16$, ns) and its significance is reduced to zero. This demonstrates that training motivation fully mediates the pathway between general attitude toward training and trainees' reactions.

Table 5 and Table 6 also show that new employees' training self-efficacy predicts their training motivation, training motivation predicts reactions, but training self-efficacy does not predict trainees' reactions. Thus, mediation analyses cannot be executed in this case. Career planning does not predict newcomers training motivation. Under those circumstances, mediation analyses cannot be performed for newcomers either.

Permanent employees

Permanent employees' general attitude toward training predicts their training motivation, training motivation predicts reactions, and attitude toward training predicts reactions (Table 5 and Table 6). Taken together attitude toward training and training motivation predict trainees' reactions ($R^2 = .15$, $F(2, 100) = 8.89$, $p < .001$), but in a multiple regression model attitude toward training variable's beta ($\beta = .33$, $p < .001$) is smaller ($\beta = .16$, ns) and its significance is reduced to zero. Thus, training motivation fully mediates the relationship between permanent employees' attitudes toward training and their post-training reactions.

Analyses of this study also show that permanent employees' training self-efficacy predicts their training motivation, training motivation predicts reactions, and training self-efficacy predicts reactions. Taken together, training self-efficacy and training motivation predict trainees' reactions ($R^2 = .14$, $F(2, 100) = 8.00$, $p < .001$), but the pathway between training self-efficacy ($\beta = .192$, $p < .05$) and trainees' reactions reduces to zero ($\beta = .06$, ns) showing full mediation. In other words, permanent employees' training motivation fully mediates the pathway between their training self-efficacy and their post-training reactions.

Career planning of permanent employees predict their training motivation, training motivation predicts their reactions, but career planning does not predict permanent employees' post-training reactions. In that case, no further analyses could look for mediation effects.

DISCUSSION

Researchers have studied in the past training motivation variables, its antecedents and its outcomes. However, training motivation has been rarely considered as a mediator between pre-training and post-training variables. The present study has taken three training motivation antecedents (general attitude toward training, training self-efficacy, career planning) and one training outcome (trainees' reactions), and has made one of the goals to establish that training motivation plays a mediator role between these variables.

This study, first looked at correlations between the chosen variables and found that training motivation correlates highly with general attitude toward training ($r=.64$) and moderately with self-efficacy ($r=.33$) and career planning ($r=.34$). It also found that trainees' reactions have high correlations with training motivation ($r=.47$) and general attitude toward training ($r=.43$), but has weak correlation with training self-efficacy ($r=.17$). No correlation was found between career planning and trainees' reactions.

Secondly, this study looked at different predictions. The first set of simple regression analyses revealed that training motivation can be predicted by general attitude toward training, training self-efficacy and career planning. In this study, general attitude toward training was the best predictor of training motivation; self-efficacy and career planning also predicted training motivation, but slightly. The second set of simple regression analyses showed that trainees' reactions can be predicted from general attitude toward training, training self-efficacy and training motivation with training motivation being the best predictor followed by attitude toward training. Self-efficacy predicted trainees' reactions only slightly and prediction between career planning and trainees' reactions was not significant. Our results are consistent with previous research that has shown that trainees' reactions can be predicted by training motivation (Baldwin & Ford, 1988; Orvis et al., 2009; Tai, 2006; Warr & Bunce, 1995) and that training motivation can be predicted by general attitude toward training (Carlson et al., 2000; Ford & Noe, 1987; Noe, 1986), training self-efficacy (Chiaburu & Marinova, 2005; Quinones, 1995; Tracey et al., 2001), and career planning (Colquitt et al., 2000; Fecteau et al., 1995). However, this research study contributes to psychological literature by going a step further and exploring the mediator role of training motivation.

Based on the results of the simple predictions of this study, multiple regression analyses were executed in order to establish mediation effects. It was found that training motivation mediates partially the relationship between general attitude towards training and trainees' reactions and mediates fully the relationship between training self-efficacy and

trainees' reactions. This means that these two pre-training variables affect trainees' reactions through training motivation. In other words, this study establishes two important findings. The first is that training motivation eliminates the relationship between training self-efficacy and trainees' reactions. When training self-efficacy and training motivation are both controlled, self-efficacy by itself does not influence trainees' reactions anymore and can only do so through training motivation. The second finding is that training motivation partially mediates the relationship between general attitude toward training and trainees' reactions. Thus, when attitude and training motivation are both controlled, attitude can influence better trainees' reactions through training motivation. Mediation effect could not be detected in our study between career planning and trainees' reactions. It was expected that employees who are more concerned with their careers would see more profit from the training and would enjoy it more, but this was not evidenced in our sample.

This study contributes to psychology literature not only by showing that training motivation plays a mediator role between pre-training and post-training variables, but also by showing that pre-training variables might be more important than post-training variables. A couple of studies (Fleishman & Mumford, 1989; Quinones, 1997) have already suggested that characteristics of trainees such as motivation and attitudes can be more important to training success than course-content variables. In the same fashion, results of this research showed that preconceptions of individuals before training can influence more their reactions to the training than the training itself. That is to say, the preconceptions of individual can be stronger and more powerful on liking or disliking of the program than the training content, training environment or trainer style. Pre-training attitudes greatly influence the post-training reactions and appears thereby to be a particularly important indicator for companies to improve the outcomes of their training programs. If companies invest more into improving preconceptions towards training and motivating their employees before training, it is more likely that they will have better outcomes of their training programs. Future research should consider more often individuals' pre-training attitudes as it could bring interesting insights to more effective and successful training programs in organizations.

Newcomers vs. permanent employees

Some studies have concentrated on newcomers' socialization (Allen & Meyer, 1990; Ostroff & Kozlowski, 1993), others on training and newcomer adjustment (Saks, 1995, 1996), but there were no studies that examined the same variables as this research and compared the scores between two groups. As a result it was decided to divide the participants of this study into two groups: new and permanent employees. In the studied organization new employees were considered the individuals that were under the probation period for three months. After three months employees received a status of a permanent employee. For this reason three months cut-off point was chosen to separate the two groups. Additional analyses were run in order to explore if new employees varied in their answers in comparison to permanent employees and some differences were revealed.

Newcomers and permanent employees did not differ in their training self-efficacy scores. However, newcomers scored significantly higher on the other pre-training variables (general attitude towards training, career planning, training motivation) and had more positive scores on immediate reactions than permanent employees. In brief, newcomers had more positive mean scores of pre-training attitudes and similarly more positive post-training reactions than permanent employees.

In addition to compare the mean scores, regression analyses were re-run in order to compare more profoundly the two groups. When different predictions were done for the two groups some interesting differences were observed. First, career planning predicted training motivation for permanent employees, but not for newcomers. It could be speculated that new employees are more concerned about the position that they were hired for and thus, do not have any future career plans in the organization yet. On the contrary, permanent employees did not have probation period anxiety anymore as they have been with organization for some time. They might know well the procedures and the positions available and thus might be keener to think about their career plans and objectives. Second, training self-efficacy predicted trainees' reactions of permanent employees, but not of the newcomers. In other words, if permanent employees had higher training self-efficacy, their satisfaction with the training was higher than the training self-efficacy of those employees who came to training with low self-efficacy. Post-training reactions of newcomers could not be predicted from their self-efficacy before training. Thus, from newcomers' training self-efficacy we cannot judge if their reactions to the training will be more positive or more negative.

Mediation analysis for the two groups showed some similarities and some differences. As for the similarities, mediation effects could not be tested between career planning, training motivation and reactions because the pathways between career planning and trainees' reactions were not significant for both groups. Training motivation fully mediated the relationship between general attitude toward training and trainees' reactions for new and permanent employees equally. However, training motivation fully mediated the pathway between training self-efficacy and trainees' reactions for the permanent employees, but not for the new ones. Thus, it seems that general attitude toward training and training self-efficacy of permanent employees can influence stronger trainees' reactions through training motivation. For newcomers, only general attitude towards training can influence trainees' reactions through training motivation, but not training self-efficacy.

In summary it could be said that pre-training attitudes of permanent employees are stronger and predict better their reactions to the training program than the ones of newcomers. Thus, as newcomers already have more positive pre-training attitudes and post-training reactions, the focus should be turned more on permanent staff.

Theoretical and practical implications

Scientifically this study has made three important contributions to psychological literature. First, it found that training motivation plays a mediator role between its antecedents and its outcomes. Many different links has been shown between training motivation and other variables, but to our knowledge no field research has put training motivation into a mediator position. Second, this study showed that new and permanent employees differ in their perceptions. Some research has been done concerning newcomers, but newcomers were rarely compared to permanent employees, and our research shows that interesting differences can be found between these two distinct groups. Third, after Kirkpatrick's evaluation model, industrial/organizational psychologists and practitioners focused a lot on training outcomes, but this research study showed that post-training reactions can be predicted even before the training starts. Pre-training attitudes and preconceptions have strong influence on the training outcomes. Thus, pre-training attitudes and their importance on the post-training variables should be reconsidered in the research and given greater attention.

From a practical point of view, the results of this study could be applied in a few different ways. Following are the findings and implications of the present research study.

The first finding of this study is that training motivation has a strong correlation with trainees' reactions. From a practical perspective, companies should consider increasing training motivation of future trainees before the training begins. This could be done by verbal persuasion, by letting employees know about the training, about its advantages, and the benefits to employees. Training should be advertised or marketed before it is delivered to insure that employees are motivated ahead of the training. This could help companies to obtain higher satisfaction scores from the employees that follow the training.

The second finding of this study is that training motivation is strongly influenced by general attitude towards training, moderately influenced by career planning, and slightly influenced by self-efficacy. This finding can be applied three ways in practice: 1) as we know that attitude strongly affects training motivation, positive attitude toward training should be increased among employees before the training. It can be encouraged by committing to a training culture, making training a part of the job and not as unnecessary obligation. If the organization itself values training and development programs and has positive and encouraging attitude toward the courses, employees might feel more motivated for those programs as a consequence. 2) As training motivation is influenced by career planning, companies should try to enhance career planning for its employees, and a special attention should be turned toward permanent staff. Before arriving at training and development programs, organizations should learn what career path individuals want to follow and let them know what training they might need and how they can support them. If employees know that training will help them with career objectives, they will be more motivated to engage in training program. 3) Feelings of training self-efficacy should be raised between employees to make them believe that they are capable of succeeding in the program. By persuading employees of their efficacy, organization can increase employees' motivation to attend training. This could be encouraged by explaining to employees what will be covered during the training, what the procedure is and what the steps consist of, if they will be evaluated and how, if there are any exams or questionnaires, and so on. By having detailed information about the program, employees might feel that they are capable of success; they might also feel surer of themselves and therefore, more motivated.

The third finding of this study is that training motivation partially mediates the relationship between general attitudes toward training and trainees' reactions, and fully mediates the relationship between training self-efficacy and trainees' reactions. From a practical perspective this means that to achieve more positive reactions of employees their training motivation has to be raised before the training program begins. In order to raise training motivation, its antecedents need to be considered. This study successfully showed that general attitude toward training, training self-efficacy, and carer planning correlates and predicts training motivation. Thus, by raising the scores of training motivation antecedents, training motivation itself will increase and trainees' positive reactions will improve. In other words, even if attitude toward training and training self-efficacy have a weak affect on reactions by itself, going through training motivation they have a stronger influence on trainees' immediate reactions after training.

The fourth finding of our study is that new employees scored higher on all studied variables (except training self-efficacy) than regular employees. Also, all predictions were better and more precise for permanent employees than for new ones. This means that pre-training attitudes fall into a pattern and are more predictable for regular employees; the pre-training attitudes of newcomers are more random and thus, the outcomes are a bit more complicated to predict. There was one exception in predictions, and it is between training motivation and reactions. Even if all other predictions were better for permanent employees, immediate trainees' reactions were predicted better from training motivation of newcomers than permanent employees. This implies that training motivation either it is high or low can tell us with more accuracy if immediate reactions of newcomers will be more positive or negative.

This study also found that when the participants were separated into two groups (new and permanent employees), training motivation fully mediated the relationship between attitude toward training and reactions for both groups – this mediation was only partial when participants were considered as one group. It was also found that training motivation mediates completely the relationship between training self-efficacy and reactions for permanent employees, but not for new ones. These findings tell us that attitude toward training can affect trainees' reactions through training motivation for both groups and training self-efficacy of permanent employees can affect reactions through motivation, but training self-efficacy of newcomers cannot. From a practical point of view this means that organizations should concentrate more on training self-efficacy of their permanent staff, but try to increase positive

attitudes towards the program for all individuals that will participate in the training program. The positive attitude and higher self-efficacy will result in higher motivation and will guarantee more positive reactions from the trainees.

In summary organizations should turn their focus on training motivation, try to increase positive attitude of their employees toward their training programs, know career objectives of their staff and maximize output on these attitudes. This could reassure companies that their money is well invested, that those training and development programs bring beneficial outcomes to their staff, and that organizations achieve the training effectiveness that they anticipated.

Limitations and future work directions

The questionnaire was translated from English to French and the translation from French back to English was conducted in order to assure the validity of the translation. However, the French questionnaire was not validated on an independent sample. Even if plausible alphas were obtained in this study with 152 participants, further research should ensure the proper validation of translated French items of the questionnaires.

Further research should also include additional items to 'general attitude toward training' scale. Our study took into consideration only affective responses (feelings or emotions towards training), but Katz (Halloran, 1967) talked about cognitive and behavioral aspects of attitude as well. *Cognitive aspect* is trainee's belief about training and *behavioural information* is the past behaviours associated with training. These two additional dimensions could expand general attitude toward training scale and perhaps could provide us an even broader understanding of how attitudes toward training affect training motivation and trainees reactions.

In our study, career planning and trainees reactions did not correlate, but the average age of our sample was 42 years. It is possible that age affected the relationship between career planning and reactions and further studies could re-examine this correlation, and explore if

there are mediating or moderating variables that can influence the relationship between those career planning and trainees' reactions.

Not many studies were set out to compare the newcomers and permanent employees, but in this study interesting differences were found between these two groups and their pre-training attitudes and post-training reactions. As a result, we would suggest that future studies look more often at these two distinct groups and compare them on different variables. It seems that new leads and discoveries could be made by doing so.

CONCLUSION

The results of this study suggest that pre-training attitudes are great predictors of post-training reactions even before the training occurs. General attitudes toward training and training self-efficacy go through training motivation which predicts and influences greatly trainees' reactions. Thus, training motivation should be an important concept that organization should consider and focus on.

Additionally, this study discovered that the results of analyses differ when employees are separated to new and permanent. It appeared that new employees score higher on all of the variables (except training self-efficacy), but the predictions from pre-training variables to post-training reactions are more precise and more predictable for permanent staff. Therefore, organizations should evaluate pre-training attitudes of their regular employees as this will tell them if trainees will react positively to the training. Companies and researchers alike have been focusing largely on training outcomes, but the findings of present study invites to turn the attention more to pre-training variables and their influence on training effectiveness.

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APPENDICES

APPENDIX A

Original items in English used for questionnaire 1

Pre-training measures

General Attitude Toward Training (*att*) items

1. I view my education on-the-job as a continuous, lifelong endeavour.
2. I am proactive in seeking ways to improve what I do.
3. I deliberately seek out learning opportunities rather than waiting to be sent to training.
4. I have learning goals designed to enhance my current work assignment and prepare me for future.

Self-efficacy (*SelfEff*) items

5. I have good learning abilities.
6. It takes me time to assimilate the contents of training.
7. I find it hard to understand theoretical explanations.
8. If the course is too abstract, I easily get lost.
9. I find writing easy.
10. I can easily memorise the course material.
11. I am able to follow even if the trainer goes quickly.

Career planning (*career*) items

12. I have a plan for my career.
13. I have a strategy for achieving my career goals.
14. My career objectives are not clear (R).
15. I change my career objectives frequently (R).
16. I have not really decided what my career objectives should be yet (R).

Training motivation items

Valance (*motVal*):

17. By attending training activities, I want to improve technical/practical knowledge in my job.

18. I feel that it is important to take part in training programs in order to strengthen my problem-solving skills.

19. I think it is important to learn new things from training activities.

Instrumentality (*motInstr*):

20. I believe that training activity is useful for workers who occupy a job position similar to mine.

21. Usually I am able to apply to my job what I learn in training activities.

22. Acquiring new skills, thanks to training activities, positively influences my performances.

23. If I am involved in training activities, I am confident I can master aspects of my job.

Expectancy (*motExp*):

24. If I am involved in training activities, I am confident I can learn the new knowledge taught in the training activities.

25. If I am involved in training activities, I am confident I can improve my ability of initiative.

26. If I participate in training activities, I am confident I can apply them to my job.

Original items in English used for questionnaire 2

Post-training measures

Trainees' Reactions

Enjoyment (*enj*):

1. I really enjoyed this course.
2. This course was very good fun.
3. This course was extremely interesting.

Utility (*util*):

4. This course was very relevant to my job.
5. This course was a great practical value to me for my job.
6. This course was closely related to my job needs.

Motivation to transfer (*motTransfer*):

7. I am keen to apply what I have learned on this course.
8. I intend to use what I have learned on this course.
9. I feel very committed to applying what I have learned on this course to my job.

Perceived support (*prcSupport*):

10. My supervisor will help me to apply to the job what I learned in this course.
11. The other supervisors will help me to apply to my job what I learned in this course.
12. Human Resources Agent will help me to apply to my job what I learned in this course.

APPENDIX B

Formulaire de consentement

Titre de la recherche : Interrelations entre attitude, efficacité personnelle, planification de carrière, motivation pour la formation et satisfaction des employés avec la formation.

Chercheur : *Aurelija Adomaityte*

Directeur de recherche : *Robert Haccoun*

A) RENSEIGNEMENTS AUX PARTICIPANTS

1. Objectifs de la recherche.

Ce travail de recherche vise à étudier l'influence de l'attitude, l'efficacité personnelle, la planification de carrière et la motivation pour la formation sur la satisfaction des employés avec la formation.

2. Participation à la recherche

Votre participation à cette recherche consiste à :

- remplir deux questionnaires;
- remettre les questionnaires remplis au chercheur.

3. Confidentialité

Votre réponse au questionnaire est strictement confidentielle et totalement anonyme. Veuillez ne pas inscrire votre nom ou matricule sur le questionnaire. Seul un sommaire des résultats globaux sera rendu disponible à votre organisation aussi bien qu'à vous-même.

4. Avantages et inconvénients

En participant à cette recherche, vous allez contribuer à la science et à la recherche empirique dans le domaine de la psychologie du travail et des organisations. Vous pourrez également aider l'organisation à mieux comprendre les besoins de ses employés, donc vos besoins.

5. Droit de retrait

Votre participation est entièrement volontaire. Si vous ne souhaitez pas participer à cette recherche, remettez-nous le questionnaire vide.

Vous êtes libre de vous retirer en tout temps par avis verbal, sans préjudice et sans devoir justifier votre décision. Si vous décidez de vous retirer de la recherche, vous pouvez communiquer avec le chercheur, au numéro de téléphone indiqué à la dernière page de ce document. Si vous vous retirez de la recherche, les renseignements qui auront été recueillis au moment de votre retrait seront détruits.

B) CONSENTEMENT

Je déclare avoir pris connaissance des informations ci-dessus, avoir obtenu les réponses à mes questions sur ma participation à la recherche et comprendre le but, la nature, les avantages, les risques et les inconvénients de cette recherche.

Après réflexion, je consens librement à prendre part à cette recherche. Je sais que je peux me retirer en tout temps sans préjudice et sans devoir justifier ma décision.

Signature : _____ Date : _____

Nom : _____ Prénom : _____

Je déclare avoir expliqué le but, la nature, les avantages, les risques et les inconvénients de l'étude et avoir répondu au meilleur de ma connaissance aux questions posées.

Signature du chercheur _____ Date : _____

Nom : _____ Adomaityte _____ Prénom :

_____ Aurelija _____

Pour toute question relative à la recherche, ou pour vous retirer de la recherche, vous pouvez communiquer avec Aurelija Adomaityte, étudiante à la maîtrise, au numéro de téléphone suivant : ... ou à l'adresse courriel suivante :

Toute plainte relative à votre participation à cette recherche peut être adressée à l'ombudsman de l'Université de Montréal, au numéro de téléphone ... ou à l'adresse courriel [...](#).
(L'ombudsman accepte les appels à frais virés).

Questionnaire 1

VEUILLEZ RÉPONDRE À CHACUN DE CES ÉNONCÉS, EN SÉLECTIONNANT LE CHIFFRE DE L'ÉCHELLE QUI REPRÉSENTE LE MIEUX VOTRE DEGRÉ D'ACCORD :

1	2	3	4	5
Fortement en désaccord	Plutôt en désaccord	Ni en accord/Ni en désaccord	Plutôt en accord	Fortement en accord

- | | | |
|-----|---|-----------|
| 1. | La formation en milieu de travail est pour moi un effort continu et permanent. (att) | 1 2 3 4 5 |
| 2. | Je cherche personnellement les moyens pour améliorer ce que je fais au travail. (att) | 1 2 3 4 5 |
| 3. | Je cherche délibérément des opportunités d'apprentissage plutôt que d'attendre d'être envoyé(e) en formation. (att) | 1 2 3 4 5 |
| 4. | Mes objectifs d'apprentissage visent à améliorer mon poste actuel et me préparer pour le futur. (att) | 1 2 3 4 5 |
| 5. | Je possède de bonnes capacités d'apprentissage. (SelfEff) | 1 2 3 4 5 |
| 6. | Cela me prend du temps pour assimiler le contenu d'une formation. (SelfEff) | 1 2 3 4 5 |
| 7. | Je trouve cela difficile de comprendre des explications théoriques. (SelfEff) | 1 2 3 4 5 |
| 8. | Si le cours est trop abstrait, je me sens facilement perdu(e). (SelfEff) | 1 2 3 4 5 |
| 9. | Je trouve l'écriture facile. (SelfEff) | 1 2 3 4 5 |
| 10. | Je peux facilement mémoriser le contenu d'un cours. (SelfEff) | 1 2 3 4 5 |
| 11. | Je suis capable de suivre même si le formateur va vite. (SelfEff) | 1 2 3 4 5 |
| 12. | J'ai un plan de carrière. (career) | 1 2 3 4 5 |
| 13. | J'ai une stratégie pour atteindre mes objectifs de carrière. (career) | 1 2 3 4 5 |

- | | | | | | | |
|-----|--|---|---|---|---|---|
| 14. | Mes objectifs de carrière ne sont pas clairs. (career) | 1 | 2 | 3 | 4 | 5 |
| 15. | Je change fréquemment mes objectifs de carrière. (career) | 1 | 2 | 3 | 4 | 5 |
| 16. | Je n'ai pas encore décidé ce que mes objectifs de carrière devraient être. (career) | 1 | 2 | 3 | 4 | 5 |
| 17. | En assistant à des activités de formation, je veux améliorer ma connaissance technique/pratique dans mon travail. (motVal) | 1 | 2 | 3 | 4 | 5 |
| 18. | Je sens qu'il est important de prendre part à des programmes de formation afin de renforcer mes capacités à résoudre des problèmes. (motVal) | 1 | 2 | 3 | 4 | 5 |
| 19. | Je pense qu'il est important d'apprendre de nouvelles choses à partir d'activités de formation. (motVal) | 1 | 2 | 3 | 4 | 5 |
| 20. | Je crois qu'une activité de formation est utile pour les travailleurs qui occupent un poste similaire au mien. (motInstr) | 1 | 2 | 3 | 4 | 5 |
| 21. | Habituellement, je suis capable d'appliquer à mon poste ce que j'apprends lors d'activités de formation. (motInstr) | 1 | 2 | 3 | 4 | 5 |
| 22. | Acquérir de nouvelles aptitudes, grâce aux activités de formation, influence positivement mes performances. (motInstr) | 1 | 2 | 3 | 4 | 5 |
| 23. | Si je suis impliqué(e) dans les activités de formation, je suis confiant(e) que je peux maîtriser des aspects de mon emploi. (motInstr) | 1 | 2 | 3 | 4 | 5 |
| 24. | Si je suis impliqué(e) dans les activités de formation, je suis confiant(e) que je peux apprendre les nouvelles connaissances enseignées dans les activités de formation. (motExp) | 1 | 2 | 3 | 4 | 5 |
| 25. | Si je suis impliqué(e) dans les activités de formation, je suis confiant(e) que je peux améliorer mon sens de l'initiative. (motExp) | 1 | 2 | 3 | 4 | 5 |
| 26. | Lorsque je participe aux activités de formation, je suis confiant(e) de pouvoir les mettre en application au travail. (motExp) | 1 | 2 | 3 | 4 | 5 |

COMME DANS TOUTE ÉTUDE, CERTAINES INFORMATIONS DE BASE SONT REQUISES AFIN D'INTERPRÉTER ADÉQUATEMENT LES RÉSULTATS. VEUILLEZ NOTER QUE LES RÉPONSES INDIVIDUELLES SONT CONFIDENTIELLES ET NE SERONT PAS DÉVOILÉES À VOTRE EMPLOYEUR.

1. Votre âge : _____ Sexe : H _____ F
2. Niveau d'éducation complété :
 _____ Élémentaire _____ Cégep
 _____ Secondaire _____ Université
3. Quel est le type de poste que vous occupez?
 _____ Travailleur _____ Gestion 2^{ième} niveau
 _____ Supervision 1^{er} niveau _____ Niveau supérieur
4. Depuis combien de temps occupez-vous votre poste actuel ? _____ année(s)
 _____ mois
5. Depuis combien de temps êtes vous avec dans votre entreprise ? _____ année(s)
 _____ mois

NOTEZ QUE L'ÉTUDE CONSISTE EN DEUX QUESTIONNAIRES REMIS RESPECTIVEMENT AU DÉBUT ET À LA FIN DU PROGRAMME DE FORMATION. AFIN DE POUVOIR ASSOCIER LES DEUX QUESTIONNAIRES TOUT EN ASSURANT VOTRE CONFIDENTIALITÉ ET ANONYMAT, MERCI DE FOURNIR L'INFORMATION SUIVANTE :

Jour de votre naissance		3 premières lettres du prénom de votre mère			3 premières lettres du prénom de votre père		

Exemple :

Si votre jour de naissance est le 22 mai 1960, le prénom de votre mère est Marie et celui de votre père Pierre :

Jour de votre naissance		3 premières lettres du prénom de votre mère			3 premières lettres du prénom de votre père		
2	2	M	A	R	P	I	E

Questionnaire 2

VEUILLEZ RÉPONDRE À CHACUN DE CES ÉNONCÉS, EN SÉLECTIONNANT LE CHIFFRE DE L'ÉCHELLE QUI REPRÉSENTE LE MIEUX VOTRE DEGRÉ D'ACCORD :

1	2	3	4	5
Fortement en désaccord	Plutôt en désaccord	Ni en accord/Ni en désaccord	Plutôt en accord	Fortement en accord

- | | | |
|-----|---|-----------|
| 1. | J'ai beaucoup apprécié ce cours. (enj) | 1 2 3 4 5 |
| 2. | J'ai beaucoup appris dans ce cours. (enj) | 1 2 3 4 5 |
| 3. | J'ai eu beaucoup de plaisir dans ce cours. (enj) | 1 2 3 4 5 |
| 4. | Ce cours était extrêmement intéressant. (enj) | 1 2 3 4 5 |
| 5. | Ce cours était très pertinent pour mon travail. (util) | 1 2 3 4 5 |
| 6. | Ce cours est d'une grande valeur pratique pour moi dans mon travail. (util) | 1 2 3 4 5 |
| 7. | Ce cours était étroitement en lien avec les besoins de mon poste. (util) | 1 2 3 4 5 |
| 8. | Dans mon travail, il me sera facile d'appliquer ce que j'ai appris dans ce cours. (motTransfer) | 1 2 3 4 5 |
| 9. | Mes collègues de travail m'encourageront à appliquer au travail ce que j'ai appris dans ce cours. (motTransfer) | 1 2 3 4 5 |
| 10. | Mon superviseur m'aidera à appliquer dans mon travail ce que j'ai appris dans ce cours. (prcSupport) | 1 2 3 4 5 |
| 11. | Les autres superviseurs m'aideront à appliquer dans mon travail ce que j'ai appris dans ce cours. (prcSupport) | 1 2 3 4 5 |
| 12. | L'agent de Ressources Humaines m'aidera à appliquer dans mon travail ce que j'ai appris dans ce cours. (prcSupport) | 1 2 3 4 5 |

NOTEZ QUE L'ÉTUDE CONSISTE EN DEUX QUESTIONNAIRES REMIS RESPECTIVEMENT AU DÉBUT ET À LA FIN DU PROGRAMME DE FORMATION. AFIN DE POUVOIR ASSOCIER LES DEUX QUESTIONNAIRES TOUT EN ASSURANT VOTRE CONFIDENTIALITÉ ET ANONYMAT, MERCI DE FOURNIR L'INFORMATION SUIVANTE :

Jour de votre naissance		3 premières lettres du prénom de votre mère			3 premières lettres du prénom de votre père		

Exemple :

Si votre jour de naissance est le **22** mai 1960, le prénom de votre mère est **Marie** et celui de votre père **Pierre** :

Jour de votre naissance		3 premières lettres du prénom de votre mère			3 premières lettres du prénom de votre père		
2	2	M	A	R	P	I	E

APPENDIX C

Secondary re-analyses

In multiple regressions analysis to predict trainees' reactions general attitude toward training and motivation variables had VIF values much higher than 1 (see p. 35). It indicates that multicollinearity exists between these variables. Taking this into consideration, it was decided to re-run the analysis in order to correct the multicollinearity and improve prediction of post-training variable. All of the pre-training variables were submitted to factorial analysis.

Prior to performing factor analysis, suitability of items was assessed. The correlation matrix reveals that all the coefficients have coefficients higher than .3. The Kaiser-Meyer-Olkin (KMO) is .92, exceeding the recommended value of .6 Kaiser (1970, 1974) and Bartlett's Test of Sphericity (Barlett, 1954); the value reaches statistical significance ($p < .001$) supporting the factorability of the correlation matrix. Factor analysis of twenty-six pre-training items (attitude, career planning, self-efficacy, motivation) has extracted five factors by using alpha factoring and Varimax rotation. Factor loadings of .40 or higher were used to select items to describe a factor. All five factor solutions have an Eigen value of more than 1. Cross-loading items were removed from analyses, resulting in simple structure.

Reliability analyses for the five extracted Pre-Training factors shows that all of them has an internal consistency higher than .70. All five factors were used in analyses and accounted for 55.54% of the total variance explained. Factor loadings (after rotation) for this analysis, including alphas of extracted factors, are displayed in Table 7.

Table 7

Factor Loadings for Pre-Training items

	Factor				
	1	2	3	4	5
motInstr_22	.744				
motExp_26	.732				
motExp_23	.723				
motInstr_21	.699				
motExp_25	.540				
career_14R		.841			
career_16R		.788			
career_13		.719			
career_15R		.708			
career_12		.658			
motVal_17			.771		
motVal_18			.714		
att_4			.615		
att_2			.547		
att_1					
att_3					
SelfEff_7R				.803	
SelfEff_8R				.737	
SelfEff_6R				.597	
SelfEff_10					.765
SelfEff_11					.620
SelfEff_9					.531
SelfEff_5					
Alpha	0.87	0.78	0.85	0.78	0.71

Note: att_ = General attitude towards training, SelfEff_ = Self-efficacy, career_ = Career planning, motInstr_ = Motivation (Instrumentality), motExp_ = Motivation (Expectancy), motVal_ = Motivation (Valance).

The factor analysis showed differences with the anticipated structure and item organization. For example, ‘training motivation’ scale by Zaniboni et al. (2011) originally had 3 subscales which our analyses did not extract; self-efficacy items fell into two factors where Guerrero and Sire (2001) found only one single factor. The following section presents extracted factors and their new labels.

Factor Labels

Factor 1 has five items (alpha = .87) that contain items tapping the beliefs to impact one’s job after training activities. The highest loading item of this factor is saying: “If I am involved in training activities, I am confident I can master aspects of my job”; this factor could be named ‘job impact’.

Factor 2 (alpha = .78) contains five career items. As the items with the word ‘objective’ load highest on this factor, instead of calling it ‘career planning’, it would be more appropriate to rename it as ‘career objectives’.

Factor 3 (alpha = .85) consists of five items and seems to measure perceptions or attitudes towards improvement of job performance. The highest loading item on this factor says: “By attending training activities, I want to improve technical/practical knowledge in my job”; this factor could be labeled ‘desire to improve’.

Factors 4 and 5 measure the abilities of trainees. More precisely, *Factor 4* (alpha = .78) is better labeled as ‘general abilities’. *Factor 5* (alpha = .71) tries to measure one’s belief of abilities for specific course and is labeled as ‘course abilities’.

Regression Analyses

Table 8 regresses the five pre-training factors defined by the factor analysis against the post training reaction factor.

In regression analyses the five pre-training factors predict well trainees’ reactions ($R^2 = .38$, $F(5, 140) = 17.45$, $p < .001$) and explain 38% of variance in post-training factor – trainees’ reactions. Two out of five factors have significant beta weights: Job Impact/*Factor 1* ($\beta = .364$, $p < .001$) and Desire to Improve/*Factor 3* ($\beta = .458$, $p < .001$). By themselves alone,

these factors account for 34% of variance in trainees' reactions ($R^2 = .34$, $F(2, 143) = 37.35$, $p < .001$). Therefore, trainees who have a greater desire to improve and believe that training will have a stronger impact on their job will have more positive reactions about the received training. All standardized coefficients (β), significance levels and VIF of the five factors can be found in Table 8 below.

Table 8

Multiple Regression Analysis Summary - Predicting Trainees' Reactions using factors (N = 145)

Factor	β	Sig.	VIF
Factor1_Job Impact	.364	.000	1.005
Factor2_Career	.112	.093	1.002
Factor3_Desire to Improve	.458	.000	1.006
Factor4_Course Abilities	.127	.059	1.009
Factor5_General Abilities	.099	.140	1.008

Note. R square = .38; $F(5, 140) = 17.45$, $p < .001$

As expected, by using factor scores five pre-training variables explained better the variance in post-training factor (increase from 25% to 38%). Also, by using factor scores co-linearity is eliminated (Table 8).

To conclude, an exploratory factor analysis with alpha factoring solution was conducted to assess the underlying structure of the pre-training variables (five factors were extracted). Then, regression analysis was conducted between the extracted factors and post-training reactions. It was found that by using factor scores better prediction of post-training variable can be obtained and co-linearity of the pre-training variables can be corrected.