KEEP ON CHANGING – THE ROLE OF NEED FOR COGNITION FOR POST-TRAINING MAINTENANCE OF ENTREPRENEURIAL PROACTIVITY*

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KEEP ON CHANGING – THE ROLE OF NEED FOR COGNITION FOR POST-TRAINING MAINTENANCE OF ENTREPRENEURIAL PROACTIVITY*

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ABSTRACT

Research shows that personal initiative training is a promising way to increase entrepreneurs’ personal initiative. However, it is not clear how post-training personal initiative develops over time and why some entrepreneurs hold up personal initiative, whereas others revert to their old business routines. In a field experiment with 805 small and medium-sized business owners, we investigate the influence of individuals' need for cognition on the maintenance of entrepreneurs' personal initiative after training. Entrepreneurs high in need for cognition show a reduced decline of personal initiative after training. Our findings contribute to the development of interventions which can have long-term effects on personal initiative behavior.

INTRODUCTION

Personal initiative is defined as self-starting, future-oriented, and persistent proactive behavior (Frese & Fay, 2001). It is a key driver of entrepreneurial success (Frese, 2009; Glaub, Frese, Fischer, & Hoppe, 2014; Krauss, Frese, Friedrich, & Unger, 2005). Given its positive effects in the entrepreneurial context, personal initiative should be promoted. Training has emerged as an effective way to increase personal initiative in entrepreneurship and other vocational contexts (Glaub et al., 2014; Raabe, Frese, & Beehr, 2007). However, we know little about how personal initiative develops over time as a result of training. For this reason, it is difficult to create truly “wise interventions” (Walton, 2014) for entrepreneurial personal initiative which are premised on a precise understanding of personal initiative in the entrepreneurial context. The training transfer literature demonstrates that training effects usually decrease over time (Baldwin & Ford, 1988; Blume, Ford, Baldwin, & Huang, 2010). However, studies suggest that personal characteristics play a key role in the maintenance of training effects (Burke & Hutchins, 2007; Grossman & Salas, 2011; van der Klink, Gielen, & Nauta, 2001). A personal characteristic that should play a role in the context of entrepreneurial personal initiative maintenance is need for cognition. Need for cognition is the relatively stable tendency to engage in and enjoy cognitive activities (Cacioppo & Petty, 1982; Cacioppo, Petty, Feinstein, & Jarvis, 1996). We assume that need for cognition provides entrepreneurs with the necessary motivation to show personal initiative after training despite the considerable effort that they have to show in order to maintain personal initiative.

This study provides a first answer to the question how the effects of personal initiative training for entrepreneurs can be maintained over time. It sheds light on the role of personal characteristics by investigating the role of need for cognition for post-training personal initiative of entrepreneurs.
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HYPOTHESES DEVELOPMENT

The Effect of Personal Initiative Training on Personal Initiative Behavior

Studies in the context of entrepreneurship and other vocational contexts (Glaub et al., 2014; Raabe et al., 2007; Searle, 2008) have shown that it is possible to increase personal initiative with the help of a training that requires individuals to display all dimensions of personal initiative (self-starting, future-oriented, and persistent behavior) throughout the action sequence (Frese & Zapf, 1994; Hacker, 1998) from goal setting to information search, planning, action execution, and feedback seeking. Based on these studies, we hypothesize:

Hypothesis 1: Personal initiative training has a positive effect on personal initiative behavior.

The Decreasing Effect of Personal Initiative Training over Time

We build on the training transfer literature (Baldwin & Ford, 1988; Blume et al., 2010; Grossman & Salas, 2011) to propose that the positive effect of personal initiative training on entrepreneurs' personal initiative behavior decreases over time. A critical factor of training transfer is maintenance. Maintenance describes how long training effects can be preserved over time (Blume et al., 2010). We hypothesize a decrease in the maintenance of entrepreneurial personal initiative after training. Training effects generally decrease over time (Blume et al., 2010). The maintenance of personal initiative in particular is challenging, as proactive behavior is situation-specific (Grant & Ashford, 2008). In order to assure maintenance, people need opportunities to practice newly developed skills back at work (Chiaburu & Marinova, 2005; Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012; Smith-Jentsch, Salas, & Brannick, 2001; Tracey, Tannenbaum, & Kavanagh, 1995). However, those opportunities are often rare for entrepreneurs. Instead, back in business, they are confronted with old routines and may revert to reactive behavior patterns. Innovative behavior can be perceived as very stressful and emotionally burdensome (Janssen, van de Vliert, & West, 2004). In contrast, maintaining the status quo is less demanding. Therefore, we assume that entrepreneurs change from showing personal initiative to the strategy of satisficing (Simon, 1956) meaning that they, induced by cognitive and environmental restrictions, choose solutions that are good enough to achieve their goals instead of searching for the optimal solution. We thus hypothesize:

Hypothesis 2: The positive effect of personal initiative training on personal initiative behavior decreases over time.

Need For Cognition as a Buffer for the Decreasing Effect of Personal Initiative Training

We argue that need for cognition buffers the decreasing effect of personal initiative training on entrepreneurial personal initiative behavior. The literature on training transfer points to the importance of trainee characteristics for the maintenance of training effects (Baldwin & Ford, 1988; Colquitt, LePine, & Noe, 2000; Grossman & Salas, 2011). For maintaining personal initiative after training, need for cognition may be of particular importance. People high in need for cognition possess an active and exploring mindset, which motivates them to acquire and process new information they can use to solve problems (Cacioppo et al., 1996). Thus, people high in need for cognition are more likely to create a strong and positive attitude toward issues they are confronted with (Haugtvedt & Petty, 1992; Wu, Parker, & de Jong, 2014) and might therefore be more motivated to engage in this issue. This should be especially true for challenging cognitive training input, as people high in need for cognition enjoy effortful cognitive activity (Cacioppo &
Petty, 1982). For entrepreneurs in particular, personal initiative is challenging because it requires them to engage in self-starting, future-oriented, and persistent behavior in a constantly changing environment and in the face of adversity. Research has shown that while people low in need for cognition do not spend their cognitive energy on thinking if they are not required to (Coutinho, 2006; Taylor, 1981), people high in need for cognition engage in activities that are cognitively challenging without necessarily being externally motivated (Carnevale, Inbar, & Lerner, 2011; Dornic, Ekehammar, & Laaksonen, 1991; Espejo, Day, & Scott, 2005). Therefore, entrepreneurs high in need for cognition should have a higher motivation to refrain from the strategy of satisficing (Simon, 1956) than entrepreneurs low in need for cognition. Hypothesis 3 states:

Hypothesis 3: Need for cognition moderates the effect of personal initiative training on personal initiative behavior over time such that the effect of personal initiative training on personal initiative behavior decreases to a lesser degree for people high in need for cognition than for those low in need for cognition.

METHOD

Training Design and Study Procedure

We conducted our study within the context of a project promoting business success of small and medium-sized businesses in Lomé, Togo. The training started in April 2015 and consisted of 12 three-hour sessions over the course of four weeks and a four-month coaching program of four three-hour coaching sessions. The training was based on action regulation theory (Frese & Zapf, 1994; Hacker, 1998) and aimed to increase entrepreneurial personal initiative. We followed the training principles developed by Glaub et al. (2014). Local trainers conducted the training with the participants. To test our hypotheses, we conducted a randomized controlled field experiment and used a longitudinal pre-test post-test design with four measurement waves over a period of two years. The first measurement wave (T1) took place six months before the training. There were three follow-up measurement waves: one month after the training (T2) to assess short-term effects of training, five months after the training (T3) to assess mid-term effects of training, and 13 months after the training (T4) to assess long-term effects of training. We collected data with the help of structured interviews. All interview questions were pretested before we used them in the field. The interviews were conducted in French or in local language.

Sample

The participants of our study were owners of small and medium-sized informal businesses with less than 50 employees from Lomé, Togo. Using stratified sampling based on sector of activity, gender, level of business activity and profits prior to the training, we randomly assigned 500 applicants to our training group and 500 applicants to a non-treatment control group. We excluded 74 entrepreneurs who were assigned to the training group but did not come to any session or who mistakenly participated in the training from our study sample. To follow the guidelines for a true longitudinal design (Ployhart & Vandenberg, 2010), 121 entrepreneurs who did not take part in all measurement waves were also. The final sample consisted of 2415 observations from 805 participants (397 in the training group, 408 in the control group), resulting in an average of three observations per participant. With t-tests, we checked for pre-training differences between the training group and the control group for all study variables measured during the first measurement wave. We did not find any differences. The mean age was 41.3 years. 50.8% of entrepreneurs were female. 29.4% of the businesses were from the manufacturing sector, 45.3% in commerce, and 25.2% in the service sector.
Measures

All measures were translated from English into French and back. In a next step, the measures were translated into the two local languages and into French again.

Personal initiative. We assessed personal initiative in the three follow-up measurement waves (T2-T4) with interview questions adapted from Frese, Kring, Soose, and Zempel (1996). Following Frese et al. (1996), we assessed quantitative and qualitative personal initiative. We defined and measured quantitative personal initiative as the number of changes participants made concerning their business in the previous six months. Two independent local coders rated quantitative personal initiative by counting the changes and taking into account whether the change was rather a minor change that did not require much effort (coded as “1”) or a major change that required considerable effort (coded as “2”). The sum of the weighted changes constituted quantitative personal initiative. Intra-class correlation coefficients (ICC; Shrout & Fleiss, 1979) showed good reliabilities throughout the different measurement waves (ICC between .93 and .94). Thus, we used the means of the coders’ ratings as measures of quantitative personal initiative. Qualitative personal initiative was measured with the help of interview questions asking for the change requiring the most effort. We asked whether the participants had shown initiative by developing the idea for the change by themselves and by implementing the change on their own and in a different way than other businesses. The answers of the participants were coded on a scale from zero (no change, therefore no qualitative initiative at all) to five (high qualitative personal initiative). We used the coding scheme by Glaub et al. (2014) and adapted it to the Togolese context to rate the participants’ answers. Similar to the procedure for quantitative initiative, two independent local coders rated the level of qualitative personal initiative. Reliabilities between the coders’ ratings were good throughout the different measurement waves (ICC between .95 and .97), so we once again used their rating means to measure qualitative personal initiative.

Training participation. We measured training participation as a dummy variable indicating whether the participants were assigned to the training (value “1”) or not (value “0”).

Time. The time measure reflects the number of the follow-up measurement waves. For the first follow-up measurement wave (T2), we coded time as “1,” for the second (T3) as “2,” and for the third (T4) as “3.”

Need for Cognition. In the first measurement wave (T1), we asked for the participants’ level of need for cognition with nine items adapted from Cacioppo, Petty, and Kao (1984; α = .68). In a pre-test, we identified those nine items as the items with the highest comprehensibility for our study context. A sample item was “I would prefer complex to simple problems.” Answers were rated on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree).

Control variables. We measured all control variables in the first measurement wave. We included participants’ gender (0 = male, 1 = female), age in years, sector dummy variables for commerce (0 = not in commerce, 1 = in commerce) and service (0 = not in service, 1 = in service), business profits in the previous full month (in CFA-Franc), and a more trait-oriented measure of personal initiative (Frese, Fay, Hilburger, Leng, and Tag, 1997; α = .73) as control variables.

Method of Analysis

Our data set includes 2415 observations from 805 participants. We conducted growth modeling using random coefficient models to test our hypotheses. By doing so, we took into
account that the different measurements of personal initiative are nested within our participants and thus avoided biased parameter estimates (Bliese & Ployhart, 2002).

RESULTS

We found positive auto-correlations of quantitative and qualitative personal initiative (between $r = .30$ and $r = .38$ for quantitative and between $r = .23$ and $r = .35$ for qualitative personal initiative), indicating moderately stable constructs. Moreover, measures of quantitative and qualitative personal initiative showed high correlations within the measurement waves (between $r = .63$ and $r = .77$).

Hypothesis 1 stated that there is a positive effect of personal initiative training on personal initiative. As hypothesized, personal initiative training had a significant positive effect on quantitative personal initiative ($b = 0.91$, $p < .01$) and qualitative personal initiative ($b = 0.77$, $p < .01$).

Hypothesis 2 stated that the positive effect of personal initiative training on personal initiative decreases over time. To test this hypothesis, we included an interaction term of the mean centered time variable and the mean centered training participation variable in our model. There was a significant negative effect of the interaction term on quantitative personal initiative ($b = -0.55$, $p < .01$) and qualitative personal initiative ($b = -0.30$, $p < .01$), confirming the hypothesized decline.

In Hypothesis 3, we assumed a moderating effect of need for cognition on the post-training development of personal initiative. We focused on personal initiative development in the training group of our sample ($N=397$) to test this hypothesis. We included an interaction term of the mean centered time variable and the mean centered need for cognition variable in our model. As expected, we found a significant interaction effect of the two-way interaction term of time and need for cognition on qualitative initiative ($b = 0.17$, $p < .05$). However, contrary to our expectations, the two-way interaction did not have a significant effect on quantitative personal initiative ($b = -0.09$, $p = ns$). Simple slope analysis revealed that the slopes for participants high and low in need for cognition were negative and significant and that the decrease in qualitative personal initiative for low levels of need for cognition was stronger (low need for cognition = -.82, $t(389) = -12.88$, $p <.01$) than for high levels of need for cognition (high need for cognition = -.62, $t(389) = -9.67$, $p <.01$).

DISCUSSION & IMPLICATIONS

With this study, we wanted to gain deeper insights concerning the post-training development of entrepreneurial personal initiative. We analyzed the role of need for cognition in this context. Confirming our hypotheses, we found that personal initiative training had a positive effect on personal initiative behavior and that post-training personal initiative decreased over time. As expected, we found that entrepreneurs high in need for cognition showed a weaker decline in qualitative personal initiative after training compared to those low in need for cognition. Contrary to our expectations, we could not confirm this effect of need for cognition on quantitative personal initiative.

Our study contributes to the literature on personal initiative and other proactive behaviors. First, our findings provide insight on long-term development of personal initiative subsequent to training. Our results indicate that post-training personal initiative does not remain at a constant level but decreases over time, which shows that we have to move away from looking at "snapshots"
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(Walton, 2014, p. 76) and move towards looking at the long-term development of post-training personal initiative behavior and its determining factors. Second, our study offers an in-depth view on inter-individual differences that explain the long-term effects of training on entrepreneurial personal initiative. To date, there are only few empirical insights into characteristics that make proactive behavior training successful (e.g. Strauss & Parker, 2015). Our study has important implications for practitioners. According to attribute-treatment-interaction literature (Gully & Chen, 2010), training is more effective if the training content matches the respective background, capabilities, traits, and interest of training participants. Training providers could use our findings in different ways. First, they could select people high in need for cognition before starting training. Second, they could stimulate participants’ need for cognition before training as research reveals that it can be influenced by the situation (Cacioppo et al., 1996). In view of the declining effect of personal initiative training over time, practitioners should furthermore think about post-training measures to renew training effects. Interventions like goal setting interventions or guided reflection can help to reinforce training effects (Lee & Sabatino, 1998; Richman-Hirsch, 2001; Salas et al., 2012). For example, offering booster sessions that reinforce training contents is a suitable way to renew personal initiative.

One limitation of this study is that need for cognition is only one of many possible influence factors in the area of personal initiative training. The literature on proactive behavior has shown that proactive behavior is shaped by different individual dispositions (Bateman & Crant, 1993; Fuller & Marler, 2009; Seibert, Crant, & Kraimer, 1999; Tornau & Frese, 2013) and situational factors (Baer & Frese, 2003; Frese et al., 2007; Sonnentag, 2003). However, this study sets the stage for further research on the role of dispositional factors for proactive behavior training. Future research should complement the list of beneficial factors. Additionally, high need for cognition in this study has no positive impact on the decline of quantitative personal initiative. Although our measure of personal initiative has the advantage of being detailed and action-based, it may not be sensitive enough to capture quantitative personal initiative. Future research would benefit from personal initiative measures that are more sensitive. Finally, we conducted our study in the context of small and medium-sized entrepreneurship in developing countries. We cannot be sure whether we would find the same effects of training and need for cognition on personal initiative development in industrialized countries. However, the context of entrepreneurship in developing countries is suitable as personal initiative plays an important role in entrepreneurship (Frese, 2009; Glaub et al., 2014; Krauss et al., 2005) and personal initiative training contributes to the economic development of developing countries (Frese, Gielnik, & Mensmann, 2016).

To attain long-term change in entrepreneurial personal initiative with the help of training, it is important to understand personal initiative development after training and the key factors affecting this development. Our study constitutes a starting point for the investigation of influence factors determining the long-term success of personal initiative training for entrepreneurs.

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