Performance Psychology among Business Executives in an Achievement Oriented Environment

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Abstract

In this study, the authors explored the relationship between self-efficacy, goal setting, causal attributions and need satisfaction among 124 executives in a branch leading Fortune 500 company. Findings indicate that need satisfaction, causal attributions of successful achievements due to strategy and ability, and a conscious focus on goal setting, might be important determinants of self-efficacy. Findings also indicate that empowering the employee through increased need satisfaction might be a key to achieve growth and development inside organizations

Performance Psychology in an Achievement Oriented Environment

In achievement oriented environments exposed to competition, such as companies in business, the performance of individuals is measured by tangible, objective outcomes based on expectations and previous accomplishments. Therefore, companies frequently focus on the growth and development of requisite skills of its employees aimed at maximizing individual performance and corporate financial return. Thus, essential components needed to optimize psychological factors impacting human performance should be of great interest to management and employees in such environments.

One of the most important psychological variables effecting performances is *self-efficacy* (Grant & Greene, 2004). Bandura (1997) defined self-efficacy as the strength of a person's beliefs in their ability to produce performances necessary for successful and anticipated outcomes. Further, he postulated that if someone has the requisite skill and motivation, then self-efficacy is a major determinant of an individual's actual performance. Additionally, self-efficacy is seen to affect an individual's choice of activity, effort expended and persistence at the task. In the business world then, self-efficacy is a key to professional growth and development and ultimately to improved performance. Therefore, experiences and interventions aimed at increasing and strengthening a person's self-efficacy are of critical importance.

According to Bandura (1997), experiences of performance accomplishments are the most essential source to self-efficacy. One important question then, is what other psychological variables influence performance, and how is the relation between these variables and self-efficacy? The main purpose of this study was to investigate and explore the relations between self-efficacy, need satisfaction, causal attributions, and goal setting in an achievement-oriented environment exposed to business.

In the present study, participants were one hundred and thirty seven CEO executives and middle managers in a branch leading Fortune 500 company. Predictably, the work environment was intense, performance expectations high and the demands for tangible and escalating financial increases were equally great. Long work weeks in addition to work-related travel were the norm. Clearly, this was a demanding, achievement-oriented environment, where executives and middle managers were measured by financial performance accomplishments favourable to the company.

Theoretical Background

There is a significant amount of research aimed at exploring the effect of psychological variables on performance outcome, goal attainment and achievement. For the purposes of this investigation, the term *performance psychology* will be used to describe those psychological variables believed to most directly impact performance in achievement-oriented environments.

Self-efficacy

Social cognitive theory is rooted in a view of human agency whereby individuals are viewed as executors proactively engaged in their own development and who actively control their actions. Key to this sense of agency is that individuals believe that ”what people think, believe, and feel, affect how they behave" (Bandura, 1986, p. 25). Self-efficacy refers to the specific aspect of the self, concerned with what the individual can do with the skills and capabilities he or she possesses. Self-efficacy has been found to be one of the most important factors (and often the single most important factor) contributing to successful performance in almost every sphere of life endeavours (Grant & Greene, 2004; Marsh, 1993; Bandura, 1986). Bandura defined self-efficacy as follows: “Perceived self-efficacy refers to beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p.3). Thus, self-efficacy, often called task specific self-confidence, is the aspect of self which refers to how certain (or how confident) the individual is that he or she can successfully perform requisitetasks in specific situations given one's unique and specific capabilities. Measurements used to measure people’s self-efficacy often ask for how certain people are that they can achieve certain tasks (Bandura, 2006). Thus, efficacy beliefs are assumed to result from a cognitive process, where people must analyze the task and judge themselves on how well they think they can plan and execute the necessary actions to successfully accomplish specific tasks (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1989). The cognitive aspect of self is prominent, significant and influential in terms of performance, outcome and success.

Sources of self-efficacy.

During the cognitive process people are assumed to interpret different sources of information in order to determine self-efficacy. Of the four principal sources (performance accomplishments, vicarious experiences, verbal persuasion, and physiological states), Bandura (1997) believed that the most essential and depend-

able source of self-efficacy is past performance accomplishments. Thus, authentic experiences of successful performance have the greatest influence on self-efficacy (Pajares, 1997). Experiences of mastery (or success) are therefore essential to the development of heightened self-efficacy. While essential and significant, the question remains as to what other psychological constructs both determine and influence performance? Further, when influencing performance accomplishments, a natural consequence should be that these become new mediating sources of efficacy information. An important issue here is that performance accomplishments are interpreted in light of one's self-regulatory processes, such as self-evaluations, causal attributions, strategy use, and goal setting (Zimmerman & Cleary, 2006). Although research concerning self-efficacy beliefs show that it influences other psychological constructs such as goals, for example (Locke & Latham, 2002), we want to explore if other psychological variables which affect performance also influence self-efficacy. If so, these psychological constructs should be important in order to raise self-efficacy beliefs.

Goal Setting

Goal setting theory and research initially emerged from the hypothesis that consciously developed goals strongly impact performance, achievement and success at a task (Ryan, 1970). Locke and Latham (2002) highlight several factors which are essential for goals to positively affect performances: (1) First, the goal has to be specific, meaning that it must be both observable and measurable relative to the desired outcome. This phenomenon of specificity and observation will be referred to as goal setting clarity in the present study. (2) Second is the perceived level of difficulty regarding the specific achievement task. It is the specific judgement made by the individual which is the critical element relative to assessing task difficulty. Tasks that are at the limit, or close to the limit of the individual's capability (rather than being too high or too low) have the optimal degree of difficulty in order to positively affect performance (Locke & Latham, 1990). This factor will be referred to as goal setting difficulty in the present investigation. (3) Third, the relationship between performance and goal setting is strongest when the individual is deeply committed to the goal (Seijts & Latham, 2000a). The strength of this engagement is referred to as goal setting commitment in this study. The importance of goal commitment is especially prominent when the goals are viewed as difficult by the individual (Klein, Wesson, Hollenbeck & Alge, 1999). Difficult goals require greater effort and are associated with lower chance for success than for easier goals (Erez & Zidon, 1984). (4) Fourth, in order for goals to be useful, effective and ongoing feedback regarding one's progress in relation to goal achievement is necessary (Locke & Latham, 2002). In order to both achieve and improve the desired performance outcome, individuals need to know how closely their performance approximates or deviates from the intended task. As Folkman (2006, p. xv) so aptly states, "Without feedback we are flying blind". The influence of this important moderating variable is referred to as goal setting feedback in the current investigation. (5) Fifth, as the complexity of the tasks needed to achieve a particular goal increases, the individual's capability to possess and implement efficient and effective goal attainment strategies is essential. Since people vary greatly in their ability to do so, the effect of goal setting on performance is smaller on complex tasks than it is on simple tasks (Locke & Latham, 2002). The individual's ability to execute necessary task strategies is therefore an important moderating

variable related to goal setting and performance. In the present study, this construct will be referred to as goal setting strategy. Together, these five factors are defined as goal setting moderators by Locke and Latham (2002).

Goal Setting and Performance

The mediators of goal setting affect performance through both cognition (task strategies) and motivation (direction, effort and persistence) (Locke & Latham, 2002). Outcomes from goal-setting research also show that self-efficacy influences goals in several ways. Specifically, findings indicate that people who are more committed to assigned goals, who find and use better task strategies to achieve their goals, and who respond more positively to negative feedback, also have high self-efficacy. People with low self-efficacy do not experience similar benefits (Locke & Latham, 1990; Seijts & Latham, 2001b). Since effective use of goal-setting influences performance, there is a relationship between goal-setting and self-efficacy, making performance accomplishments the most essential source of self-efficacy. Therefore, in this study we wanted to investigate an alternative model concerning the relationship between goals and self-efficacy. Since individuals evaluate their performance in relation to their own mastery goals (Zimmerman & Cleary, 2006), there is reason to believe that the relationship between goals and self-efficacy is mutual. Tschannen-Moran, Woolfolk Hoy and Hoy's model (1989) shows a reciprocal relationship between goals and performance. Bandura's (1997, p.122) model also shows that self-efficacy influences goals, but also that goals influence performance, which again influences self-efficacy (new sources of efficacy information). Thus, goals also influence self-efficacy through mediating cognitive processes. Our first goal in this study was therefore to investigate if the moderators of goal setting are positively related to self-efficacy and if goals influence self-efficacy.

Causal Attributions

The reasons one uses to explain outcomes in achievement domains are typically referred to as causal attributions. In its most basic form, *attribution theory* is concerned with the reasons used by individuals to explain why they either succeeded or failed at a given task. Intra-personal causal attribution theory focuses on the internal processing done by individuals regarding the thoughts and feelings present during this process of judgement and evaluation (Martinko & Thomson, 1998). The present study will focus exclusively on intra-personal attributions.

Causal attribution and self-efficacy.

The approach to causal attribution theory has a well documented influence on self-efficacy (Arbin, Appleman, & Burger, 1980; Marsh, 1984, 1986; Marsh, Carins, Relich, Barnes, & Debus, 1984; Skaalvik & Skaalvik, 2005). In fact, the influence on self-efficacy is related to different dimensions of causality for one's successful and unsuccessful achievements. Weiner (1989) hypothesized that attributions hinge on three primary dimensions; (1) locus of causality (internal vs. external), (2) stability (whether the causes change over time) and (3) locus of controllability (whether the cause is or is not under the individual's control) (Weiner, 1985).Theorists agree that people have a general tendency to utilize self-protecting and self-enhancing attributional patterns (Skaalvik, 1990, 1994; Zuckerman, 1979; Withley & Frieze, 1985), which implies that individuals tend to attribute their own success to internal, stable, controllable factors such as effort and ability, and their failures to external factors that are both unstable and out of their control.

Self-enhancing attributions generally strengthen an individual's self-view and perceptions of competence, ability and control by enabling them to take responsibility for their successes (locus of causality). A natural consequence of this finding should be that individuals who attribute their successful performances to their own abilities would experience concomitant increases in self-efficacy. Self-efficacy should be positively enhanced (or at least maintained) when causal attributions of successful achievements are made due to ability and strategy. Thus, strategy may beindicative of ability. Because of the tendency toward self-protection, unsuccessful achievements are generally not attributed to low ability or competence abilities (Skaalvik, 1990, 1994). Since successful outcomes are judged to result from one's own capabilities and strengths, it seems reasonable to hypothesize a positive relationship between self-efficacy and internal (both controllable and uncontrollable) causal attributions following successful performance. Research also shows that individuals tend to protect the self by attributing unsuccessful outcomes behaviour to causal dimensions and controllable factors (e.g. "I can change next time") or to external factors that are unstable or due to external variables such as another person or the situation (e.g. "I didn't succeed because of the unique circumstances in this task and as soon as those circumstances change, I will be successful") (Skaalvik, 1990, 1994; Zuckerman, 1979; Withley & Frieze, 1985).

In general, internal, unstable and controllable attributions following failure lead to positive future success because the individual believes that they can control the cause of the unsuccessful behaviour (Bandura, 1997). On the other hand, attributions made to internal, stable and uncontrollable causes after failure, such as lack of ability, may, over time, lead to negative future expectancies and 'learned helplessness' because the individual perceives that they have little control over the cause of their unsuccessful behaviour (Abramson, Seligman, & Teasdale, 1978; Maier & Seligman, 1976; Dweck, 1975). Because people tend to engage in self-protecting attributions when experiencing failure in achievement situations, there should be a small or no reduction to self-efficacy beliefs. As with most self-regulatory processes, there is empirical evidence showing a reciprocal relationship between peoples' causal attributions and their perception of personal efficacy (Zimmerman & Cleary, 2006). For example, highly efficacious people tend to believe that performance outcomes are personally controllable (failure due to effort), whereas people with low self-efficacy tend to believe that performance outcomes are uncontrollable (failure due to ability) (Bandura, 1997). Thus, the relationship between causal attributions and self-efficacy is viewed as mutual.

Our second goal in this study was to investigate if causal attributions made to ability and strategy following successful achievements are positively related to self-efficacy, and if causal attributions of successful achievements to ability and strategy influence self-efficacy.

The Environmental Influence and Self-Determination Theory

Based on the view of *social cognitive theory* described by Bandura (1997), individuals are both products and producers of their environment and of their social systems. In essence, people are viewed as self-organizing, proactive, self-reflecting and self-regulating. Human functioning is viewed as the product of a dynamic interplay of personal, behavioural, and environmental influences. Therefore, it is important to investigate envi-

ronmental influences related to performance psychology.

The value and importance of intrinsic motivation in the achievement process cannot be overstated. Deci and Ryan (1985, p. 8) define intrinsic motivation as: "The life force or energy for the activity and for the inward pursuit to feel competent, self-determining and to enjoy the activity". One basic foundation of self-determination theory supports the existence of basic needs that must be satisfied in the individual's environment in order to achieve personal growth and development (Deci & Ryan, 2002). Thus, in order for individuals to proactively engage in their own learning and development, intrinsic motivation is a requisite and desirable component of achievement pursuits. Social cognitive theory emphasizes the importance and presence of necessary conditions in the environment in order to achieve, maintain or increase intrinsic motivation. The environmental conditions necessary for achieving and developing intrinsic motivation are the universal psychological need for human growth and development (Deci & Ryan, 2002). Further, it is believed that these needs are fundamental for all humans regardless of culture or stage of development (Deci & Ryan, 2002). Deci and Ryan especially emphasize the importance of three main groups of psychological needs, forming the foundation for a persisting and enduring intrinsic motivation. These three psychological needs are: (a) the need for competence, (b) the need for autonomy and (c) the need for relatedness.

The need for competence refers to the general feeling of functioning effectively in one's social and achievement environment. The need for competence in one's environment highlights the importance of experiences, or the lack of experiences, where the individual has the opportunity to optimally utilize and display their strengths and capacity (Deci, 1975; Harter, 1983; White, 1959). The need for competence also leads humans to seek challenges which are optimal in relation to their ability, skills and capacity. Bandura (1986) argues that successful accomplishments in these types of tasks - where demands match capacity - have an especially desirable, strengthening and positive effect on self-efficacy as well as motivation (Csikszentmihalyi, 1988).

The need for self-determination or autonomy refers to the individual's perception or understanding of being the source to, or origin of, the achievement behaviour (de Charms, 1968; Deci & Ryan, 1985; Ryan & Connell, 1989). Self-determination implies that actions originate from one's own interests and values and emanate from personal initiative. Even though actions and behaviour could be affected by external sources such as requirements for certain tasks or in agreement with determined values, the individual can still feel a sense of autonomy and self-determination.

The need for relatedness highlights the feeling of connectedness and attachment to other people. It carries a dual view that the individual is taking care of others and that others are caring for the individual. Humans have the need to feel that they belong to, and with, other people, both individuals and in a community or larger society (Baumeister & Leary, 1995; Bowlby, 1979; Ryan, 1995). The need for relatedness does not consider the wishes of others as the sole or primary determinant for specific outcomes, but rather seeks a feeling of integration, acceptance and support from others as members in a mutually safe community.

Self-determination theory states that social environments that fulfil the basic psychological needs for individual growth and de-

velopment will result in motivated, engaged and successful individuals who achieve the desired outcomes in specific, achievement related tasks (Deci & Ryan, 2002). Environments which prevent the fulfilment of these basic needs will be populated with individuals who have reduced motivation, less growth, lower integrity, and less experience of well being. Thus, intrinsic motivation through need satisfaction is a prerequisite for growth and development. Therefore, need satisfaction should influence the most important psychological variable found to affect performance; self-efficacy.

Our third goal in this study is to investigate if need satisfaction is positively related to self-efficacy. Because of the importance of intrinsic motivation in the achievement process and the importance of need satisfaction in order to achieve this, we wanted to investigate if need satisfaction might be key in positively influencing other performance psychological variables. The performance psychological variables of interest were: self-enhancing causal attributions to strategy and ability when explaining successful achievement, goal-setting and self-efficacy.

Method

Participants and Procedure

One hundred and thirty seven CEO executives and middle managers in a Norwegian Fortune 500 company were asked to voluntarily participate in an on-line questionnaire concerning targeted thoughts, feelings and actions at work. The CEO executives and middle managers are hereafter defined as executives. Periodic reminders by mail and by an internal project manager were utilized. The final results were based on responses from 124 executives representing a 90.5% participation rate. A gender breakdown of the subjects included 56.5% men and 43.5% women. In terms of age, 4.8% < 30 years, 61.3 % aged 30 to 45 years, 29.8 % aged 46 to 60 years, and 4% > 60 years.

Instruments

Two of the instruments used in this study were based on previously developed scales (causal attribution and self-determination) and two were developed for the purpose of this particular study (self-efficacy and goal setting). The self-efficacy scale examined leadership capabilities, causal attributions of successful and unsuccessful achievements at work, goal setting, and the psychological construct of need satisfaction based on self-determination theory. The causal attribution and self-determination instruments, both having been used successfully and appropriately in previous research studies, were translated into Norwegian by the authors with minimal adjustments as a result of the translation. All instruments used a seven point scale, ranging from completely untrue (1) to completely true (7).

Attribution

Attribution was measured by means of the 20- item Forced Choice Attributional Style Assessment Test (ASAT - I) developed by Anderson, Jennings & Arnoult (1988). The scale was modified and used to measure intra-personal attributional style in specific work-related situations. Items measuring interpersonal behaviour were taken out in the modified version along with the choices relating to personality traits and mood. Attributions in general situations, such as "You have failed to complete the crossword puzzle in the daily paper", were not relevant to specific work performance and were thus taken out of the original test. This resulted in a six-item questionnaire for specific work related situations (three for positive outcomes and three for negative outcomes). Four different choices were offered for each item, relating to strategy, ability, effort and circumstances, which gave us 8 different

sub-scales. The participants were asked to consider the causality of their performance at work on a seven-point scale ranging from completely untrue (1) to completely true (7), for each of the 4 variables (strategy, effort, ability and circumstances). The adjusted measurement was not a forced choice as in the original scale because of the desire to investigate relationships between the different choices. For example (item 1, positive outcome): "You have just received successful feedback on tasks performed at work." (a) "I used the correct strategy to achieve it", (b) "I'm good at this", (c) "I worked really hard to achieve it", (d) "Other circumstances (people, situation, e.g.) influenced the result".

Self-determination.

We used the Basic Psychological Need Satisfaction at Work Scale (Baard, Deci, & Ryan, 2004) to measure basic psychological needs. The scale was originally a 21-item questionnaire measuring three need-satisfaction sub-scales. The authors translated the questionnaire into a 20-item questionnaire, including: autonomy (6 items), competence (6 items) and relatedness (8 items). The participants were asked to consider their feelings about their job during the last year and to indicate how true the 20 statements were on a seven-point scale. For example: "I feel like I can make a lot of input in deciding how my job gets done" (autonomy). "People at work tell me I am good at what I do" (Competence). "I really like the people I work with" (Relatedness). The reliability for the total need satisfaction scale was reported to be .89, and the three sub-scales - autonomy, competence and relatedness - .79, .73 and .84, respectively (Deci et. al., 2001). In this study, the Cronbach's Alpha for the total need satisfaction was .79, and the three sub-scales .67, .61 and .64, respectively. We chose to use the total need-satisfaction scale in the further statistical analysis because of higher reliability of it over the three sub-scales separately.

Self-efficacy.

The importance of reflective and accurate conceptual analysis and expert knowledge of what it takes to succeed in a given pursuit is essential in constructing self-efficacy scales (Bandura, 1997; Pajares & Urdan, 2006). Therefore, we investigated the most important requirements viewed by participants as essential in order to succeed in their specific and achievement-oriented environment. This process of inclusion of items was done in close co-operation with the executive leader group in this particular company. We developed a 32-item scale measuring four sub-scales of self-efficacy (8 items each). The participants were asked to consider how certain they were that they could manage different specific work-related tasks. The tasks and situations represented challenging obstacles to overcome for the participants, and were described using the label: 'the activities are not easily performed' (Bandura, 2006). The four sub-scales were: (1) General capability as a leader, (example: "How certain are you that you can manage reorganizations and finish internal changes without special turbulence.") (2) Capability as a leader related to development, learning and motivation of employees, (example: "How certain are you that you can pay attention to and challenge all your closest employees through encouraging and constructive feedback?)" (3) Capability as a leader in order to build relationships, (example: "How certain are you that you can establish a constructive and efficient cooperation with a challenging customer?)" and (4) Capability as a leader to execute management by objectives, (example: "How certain are you that you can be clear and communicate the desired directions to all your closest employees?)" In order to assure high validity, we developed an additional item to measure the individuals'

'felt importance' for each item measuring self-efficacy, for example, "How important do you think this is?" The mean score for 'felt importance' for the total scale was 6.2 with a standard deviation of .65, indicating that the participants perceived that the leadership capabilities described in the measurement tool were truly important for them in their roles as executives. The Cronbach's Alpha for this measurement was .97.

Goal setting.

The importance of goal setting moderator variables in order for goals to have a desirable and positive effect on performance is quite clear from the goal setting literature (Locke & Latham, 2002). We therefore developed a measurement for goal setting based on these important moderators resulting in a15 item questionnaire, measuring the five sub-scales. Participants were asked to consider how true each statement was on a seven point scale concerning their thoughts about their own work. For example: "I have specific, clear goals to aim for in my job" (Clarity). "An average individual will think my goals at work are difficult" (Difficulty). "I receive concrete feedback related to my goal attainment at work" (Feedback). "I have concrete plans which tell me how to reach my goals at work" (Strategy). "It's difficult for me to be serious about my goals at work" (Commitment). All sub-scales had three items. The Cronbach's Alpha of the instruments are shown in Table 1.

Results

Table 1 shows the statistical means, standard deviations, and correlations among the psychological variables in the investigation. Correlations among the variables ranged from relatively strong to close to zero. There were relatively strong and moderately strong correlations between the moderators in goal setting (Table 1). Among the dimensions of causal attributions of successful achievements there was only one strong correlation, namely attribution to ability and strategy (.77). The correlation between attribution of successful achievements to effort and ability was moderate (.41) and the remaining correlations were weak. The dimensions of causal attributions for unsuccessful achievements to strategy, effort, and ability were moderate (between .30 and .47). The remaining correlations among the dimensions of attributions of unsuccessful achievements were weak or close to zero.

There were relatively strong correlations between self-efficacy and goal strategy (.62), goal clarity and attribution of successful achievement to strategy (.60), and between goal strategy and attribution of successful achievements to strategy (.62). Self-efficacy correlated moderately with goal clarity (.51), goal feedback (.45), need satisfaction (.49), attribution of successful achievements to strategy and ability (respectively .46 and .41). Not surprisingly, self-efficacy correlated negatively with attribution of unsuccessful achievements to ability (-.24).

The measures of attribution, goal setting, self-determination and self-efficacy were analysed by means of exploratory factor analysis with principal component extraction, varimax rotation, and eigenvalues greater than 1. Four factors were extracted as shown in Table 2, explaining 64 % of the variance in the equation. The different moderators of goal setting, attribution of successful achievements to strategy and ability, need satisfaction at work and self-efficacy leadership capability constituted one factor which we have termed "Enhancing self-efficacy". Interestingly, these causal attributions of success to ability and strategy are the two most dominating attributions together with attributions of

Study variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Self-efficacy	_	**.51**	**.45**	**.24**	**.62**	**.30**	**.49**	**.46**	**.41**	**.25**	**.18**	.04	-.24	-.18	-.07
2. Goal clarity		_	**.65**	**.46**	**.74**	**.49**	**.42**	**.60**	**.38**	.15	.13	.04	-.07	-.02	-.14
3. Goal feedback			_	**.25**	**.54**	**.47**	**.39**	**.48**	**.26**	**.18**	.05	.03	-.02	-.14	.01
4. Goal difficulty				_	**.32**	.12	.16	**.28**	**.34**	**.30**	.16	**.19**	-.03	.03	.07
5. Goal strategy					_	**.53**	**.49**	**.62**	**.43**	.18	**.20**	.13	-.08	-.17	-.13
6. Goal commitment						_	**.54**	**.51**	**.51**	**.26**	.16	**.22**	-.01	.02	-.11
7. Need satisfaction at work							_	**.36**	**.35**	**.36**	**.25**	.16	.03	-.15	-.02
8. Attribution success strategy								_	**.77**	**.32**	.10	**.40**	-.07	.02	-.14
9. Attribution success ability									_	**.41**	**.20**	**.22**	-.18	.03	-.16
10. Attribution success effort										_	**.27**	.02	.05	-.16	.02
11. Attribution success circumstances											_	.15	.12	.14	.16
12. Attribution failure strategy												_	**.30**	**.41**	.03
13. Attribution failure ability													_	**.47**	.14
14. Attribution failure effort														_	.05
15. Attribution failure circumstances															_
M	5.8	5.9	5.5	5.6	5.7	6.5	5.0	6.0	6.0	5.8	4.9	5.1	3.3	4.1	4.0
SD	0.6	0.9	1.1	1.2	0.9	0.6	.46	0.8	0.7	0.9	1.4	1.3	1.5	1.5	1.3
Cronbach's alpha	.96	.73	.69	.89	.74	.55	.79	.88	.81	.80	.89	.79	.89	.80	.88

Table 1 Zero-Order Correlations and Descriptive Statistics
Note. Numbers in bold represent significant correlations.
Correlation of .23 or higher are significant ($p < .01$) and of .18 or higher are significant ($p < .05$).

successful achievements to effort in the investigation, as shown in Table 1.They both represent internal attributions of success. Therefore, it is important to note that the attribution of success to effort loads moderately on this factor and at the same time relatively strong on the fourth factor, which we have termed "Self-efficacy neutral 2". Further, commitment to goals, clarity related to goal setting, strategy related to goal setting and self-efficacy are the other dominant variables in the investigation as shown in Table 1. They all loaded on factor one. Since the purpose of this study was to investigate how these psychological variables relate to self-efficacy, the other factors were labeled self-efficacy neutral because of the weak loadings for self-efficacy on these factors. The exception is Factor 2, named "Self-defeating attributions", because of its strong loadings on attribution of unsuccessful achievements to effort, ability and strategy. The self-defeating attributions factor is also based on the fact that self-efficacy related negatively to this factor (-.24). Factor 3 had relatively strong loading on attribution of unsuccessful achievements to circumstances. Factor 4 had relatively strong and moderate loadings on attribution of successful achievements to effort and circumstances.

Variables	Enhancing self-efficacy	Self-defeating attributions	Self-efficacy neutral 1	Self-efficacy neutral 2
Goal setting strategy	***.81***	-.12	.13	-.26
Goal setting commitment	***.78***	.06	.01	-.17
Goal setting clarity	***.78***	-.12	17	-.37
Attribution success strategy	***.73***	.18	-.46	.14
Self-efficacy leadership capability	***.73***	-.24	.07	-.02
Attribution success ability	***.71***	.10	-.44	.28
Need satisfaction at work	***.66***	-.00	.28	.12
Goal setting feedback	***.65***	-.17	.33	-.31
Goal setting difficulty	***.52***	.16	-.02	.15
Attribution failure effort	-.09	***.78***	-.09	-.30
Attribution failure ability	-.11	***.71***	.30	-.20
Attribution failure strategy	25	***.71***	-.25	-.11
Attribution failure circumstances	-.12	.23	***.61***	.29
Attribution success effort	.44	.07	.07	***.66***
Attribution success circumstances	.29	.35	.36	***.41***

Table 2 Exploratory Factor Analysis of the different psychological variables
Note. Numbers in bold represent factor loadings.

In further data analysis we wanted to explore the influence of need satisfaction, goal setting and causal attributions on self-efficacy. Based on the theory review in the introduction, the correlation matrix shown in Table 1 and the factor analysis shown in Table 2, we used a model where attribution of successful achievements to strategy and ability was one of the observed variables, self-defeating attributions to strategy, effort and ability was another one, and the sum of the goal setting moderators clarity, commitment, strategy and difficulty was the third one. The reliability for the new scales was .90 (6 items), .85 (9 items) and .87 (13 items) respectively. Deci and Ryan (2002) especially argue for the importance of addressing the psychological needs of autonomy and competence. We therefore used these two needs as the last observed variable in the model, "Need satisfaction". The reliability of this scale was .78 (12 items). These observed variables were analysed by multiple regression analysis using the enter method, where self-efficacy leadership was the dependent variable and attribution of successful achievement to strategy and ability, goal setting and need satisfaction were the predictor variables. The model accounted for 43% of the variance in self-efficacy.

All predictor variables had significant Beta coefficients on the dependant variable, except from need satisfaction on self-defeating attributions. Goal setting was the strongest predictor of self-efficacy (.32) followed by need satisfaction (.24) and attribution of successful achievements to strategy and ability (.20). Interestingly, need-satisfaction was a predictor of both attribution of successful achievements to strategy and ability, goal setting, and self-efficacy (.20, .40 and .24 respectively). Thus, in the model need-satisfaction related to self-efficacy both directly and indirectly, through attribution and goal setting. Not surprisingly, self-defeating attributions negatively predicted self-efficacy (-.20).

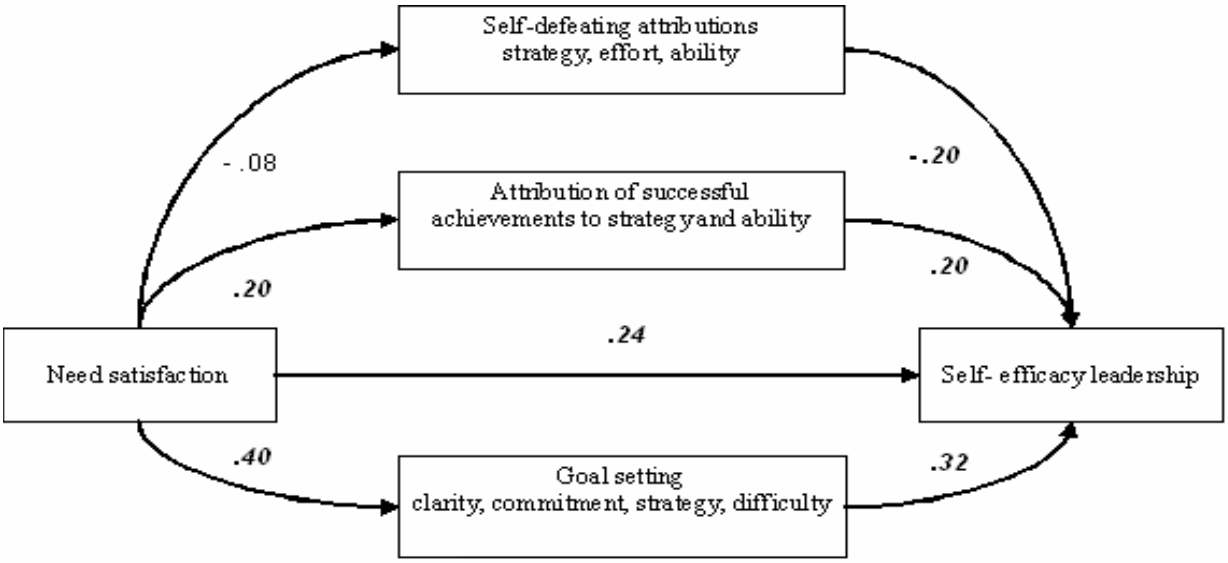

Figure 1 Linear regression analysis using the enter method
*Note.*Numbers in bold represent significant Beta coefficients values ($p < .05$).

Discussion

The main purpose of this study was to explore the relationship between self-efficacy, goal setting, causal attributions and need-satisfaction among executives in an achievement-oriented corporate environment exposed to competition. Our predictions, specified in our three expectations, were generally confirmed. The first expectation predicted that there was a positive relationship between the moderators of goal setting and self-efficacy and that goal setting influences self-efficacy. The findings support this expectation, supported by both correlational analysis and factor analysis. The regression analysis shows that goal setting influenced self-efficacy. Further, our second expectation predicted that there would be a positive relationship between attribution of successful achievements to strategy and ability and self-efficacy, and that causal attribution of successful achievements to ability and strategy would positively influence self-efficacy. Results from the correlational analysis and factor analysis confirmed the first part of this prediction, whereas the regression analysis confirmed the second part. The theory review also predicted that self-efficacy would be negatively related to attribution of failure due to ability. This was also confirmed, although the negative relationship was weak. Our last expectation predicted that there would be a positive relationship between need satisfaction and self-efficacy and our findings confirmed this. Also, the regression analysis showed that need satisfaction influenced both causal attributions of successful achievements to ability and strategy, goal setting and self-efficacy.

There is a long history of research that states that goals affect performance (Locke & Latham, 2002). During self-regulatory processes individuals evaluate their performance in relation to their own mastery goals (Zimmerman & Cleary, 2006). Since performance accomplishments are the most essential source to self-efficacy, goals should also influence self-efficacy. As Bandura (1986) states: “Tasks which are at the limit, or close to the limit of the individual’s capability (rather than being too high or too low) have the optimal degree of difficulty in order to

positively affect self-efficacy." The factor analysis shown in Table 2 indicated that there is an especially strong relation between the three moderators of goal setting: strategy, clarity and commitment, and self-efficacy, in that each loaded strongly on the self-efficacy enhancing factor (.81, .78 and .78 respectively).

These findings support our expectations that goals are positively related to self-efficacy. Thus, when loading on the same factor the variables have similar score values, for example high score on goal strategy gives high score on self-efficacy and vice versa. According to our results, the moderator variables of strategy, clarity, commitment and difficulty should be of special importance to individuals seeking to examine performance success in order to develop or maintain high self-efficacy. Regression analysis results confirmed this fact: goal setting, measured by the sum of these four moderator variables, was the strongest predictor (.32) of self-efficacy among the variables in this study (see Figure 1).

Performance accomplishments are interpreted in the light of people's self-regulatory processes. Our results give reason to believe that self-set goals which are optimal concerning the moderators of goal setting theory, could influence self-efficacy. Thus, goal setting could be a key in working towards raised self-efficacy. We should warn, however, against rigid causal interpretations. This study involved correlational analysis of cross-sectional data and conclusions regarding causal predominance between goal setting and self-efficacy cannot and should not be made. However, these findings are important regarding future research on self-efficacy and goal setting.

The correlations between self-efficacy and attributions of successful achievements to strategy and ability are moderately strong, as shown in Table 1(.46 and .41 respectively). On the other hand, the correlations between self-efficacy and causal attributions of unsuccessful achievements to strategy and ability were not significant and were negative (.04 and -.24 respectively). Further analysis through factor analysis showed that attributions of successful achievements to strategy and ability loaded strongly on the self-efficacy enhancing factor as shown in Table 2 (.73 and .71 respectively). The relationship between self-efficacy and attribution of success to strategy and ability is a positive one. The results from the regression analysis also show that attribution of success to ability and strategy had a positive impact on self-efficacy, whereas attribution of failure to ability had a weak and negative impact. Not surprisingly, results from the regression analysis showed that attributions of unsuccessful achievements to internal causal dimensions (ability, strategy and effort) had a negative impact on self-efficacy (Figure 1).

The strong correlation between attribution of successful achievements to strategy and ability (.77) is worth noting. A possible explanation of this finding may be that executives in demanding, achievement-oriented environments perceive ability as a prerequisite for choosing and employing effective and adaptive strategies when working with a task. Thus, the close relationship between attribution of successful achievements to strategy and ability might indicate that these executives' perceived that their strategic skills were predicted by their abilities (Moen & Skaalvik, 2008). In order to facilitate an effective process of development to perform better and raise self-efficacy, causal attributions could be key. Again, we should be careful not to draw inappropriate conclusions about causality. However, this should be important concerning future

research on causal attributions and self-efficacy.

Self-determination theory indicates the importance of basic needs which must be satisfied in the individual's environment in order to achieve growth and development through intrinsic motivation. Thus, individual need-satisfaction should be essential in order to achieve performance accomplishments and thereupon raised self-efficacy. The correlation between need-satisfaction and self-efficacy was positive and moderately strong (.49) as shown in Table 1. Further, the factor analysis showed that need-satisfaction was positively related to self-efficacy; Need-satisfaction loaded strongly (.65) on the self-efficacy enhancing factor as shown in Table 2. Interestingly, the regression analysis showed that need-satisfaction predicted both causal attributions of successful achievements to strategy and ability, goal setting through the moderator variables of clarity, strategy, commitment and difficulty, and self-efficacy (.20, .40, and .24 respectively). The need for competence refers to the individual's feeling of being effective in the environment. Specifically, in this study, it means that an executive's contribution is of significant importance to the organization, and that the individual has the opportunity to use his or her maximal capacity and unique strengths within the organization. This might help encourage causal attributions to ability when explaining successful outcome achievements.

As discussed earlier, Bandura (1986) argues that accomplishments on tasks that are at the limit of the individual's capacity have an especially desirable and enhancing effect on self-efficacy. Also, facilitating for employees so that they can use their capacity and unique strengths inside the company should be of great importance. The need for autonomy, or the individual's perception that they are the source of their actions might contribute to strategic thinking. Specifically, fulfilment of the basic needs autonomy and competence should mean that executives are given both the opportunity (autonomy) and the confidence (competence, self-efficacy) to do their own planning at work and to carry out these plans. Thus, executives are encouraged to be involved in their own goal setting and should further be encouraged to decide and execute the necessary actions in order to solve tasks in a particular achievement domains or challenges. This should contribute to raised awareness about responsibility, and this awareness should affect the cognitive interpretations about causality when explaining one's own performances. Thus, need-satisfaction could influence causal attributions to internal causal dimensions such as ability, strategy and effort when explaining successful achievements. Interestingly, our results from the regression analysis, where need-satisfaction predicted causal attributions of successful achievement to ability and strategy, confirms this (Figure 1). Also, being encouraged to become self-determining in own work should influence goal setting since this involve taking responsibility for own planning. Interestingly, our results also confirmed this (Figure 1).

Further, the value of intrinsic motivation cannot be overstated in achievement processes. Thus, need-satisfaction should be fundamental in achievement-oriented environments. A consequence of this should be that in order to achieve and perform better, need-satisfaction must be fulfilled. Interestingly, our results show that need-satisfaction also predicted self-efficacy (Figure 1). Again, we should be careful not to draw in appropriate conclusions about

causality. However, these indications should be of great interest. Is need satisfaction a key to achieve individual growth and development in achievement-oriented environments exposed to competition? And is need satisfaction contributing to more effective goal setting and to more functional causal attributions in order to develop self-efficacy? People occupied in helping relationship roles, for example executives with management responsibility, should be aware of this. The results indicate that effective helping relationships should be built upon self-determinacy and competence values. Thus, if the individual perceives that he or she is empowered in his or her work and learning inside the company, this might be a key to achieve growth and development through more effective and efficient goal setting, causal attributions and ultimately to raised self-efficacy.

The present study indicated that need-satisfaction, causal attributions of successful achievements to strategy and ability, (and not unsuccessful ones), a conscious focus related to goal setting and the important moderator variables of clarity, strategy, difficulty and commitment, could be important determinants of self-efficacy among executives working in an achievement oriented environment exposed to competition. Results from the current investigation are not based on longitudinal data sources, so future research of a longitudinal nature should be undertaken.

Practical suggestions.

The executives in the company we studied worked in a really hectic environment. They were expected to (and expected to) constantly upgrade their technical and leadership skills. High effort and good results were expected. We undertook several studies based on the data we collected during a period of one year with this company.

In spite of a hectic working environment (or, particularly when the situation is hectic), we learned that it is essential to take time to reflect upon own work and personal development. This process seems to be significantly more effective and efficient with the help from another person, e.g. a coach. Importantly, organizational theorist's such as Schein (2004) also argue that the key to learning is based upon reflection and experimentation, and that this takes time, energy and resources (p.395). Thus, in order for organizations to establish a positive learning culture, in which people grow and develop, they must invest time and energy in order to involve the employee in reflecting upon the learning process.

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