

## ABSTRACT

FREEMAN, EARL WAYNE. Training Effectiveness: The Influence of Personal Achievement Goals on Post-Training Self-Efficacy. (Under the direction of Michael Vasu and Timothy Hatcher.)

The purpose of the present study was to better understand how individual achievement goal orientations affect changes in post-training self-efficacy. Self-efficacy is positively related to the transfer of learning to the workplace and is therefore an indicator of training effectiveness. *A Two-Group Pretest-Posttest Design Using an Untreated Control Group* was used to study a sample of employees of homeless service organizations. Sixty one individuals were in the control group and one hundred and seventeen individuals attended a HUD-funded training in financial management and were in the treatment group. Three categories of individual goal orientation - mastery, performance-approach, and performance-avoid - served as independent variables, while changes in post-training self-efficacy served as the dependent variable. Covariates assessed included transfer system variables (the opportunity to use learning, motivation to transfer, and supervisory support) and demographic variables (age, years employed, organization type, job type, and education level).

The present study revealed that individual goal orientations were not significantly related and did not significantly predict any variation in changes in post-training self-efficacy. Only two covariates – group membership and pre-training self-efficacy – were significant and contributed to the prediction of change in post-training self-efficacy. The recommendations presented include: 1) postpone the decision to further research the

interaction of goal orientations and structures within similar populations until future studies either support or refute the findings of the present study; 2) further research the impact of age and life experiences on goal orientations; 3) further research goal profiles using similar study samples to better establish the existence of such clusters and to investigate their relationship to post-training self-efficacy and other important training outcomes; and 4) assess pre-training self-efficacy prior to every HUD-funded training so training can better suit the needs of the expected trainees.

Training Effectiveness: The Influence of Personal Achievement Goals on  
Post-Training Self-Efficacy

by  
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A dissertation submitted to the Graduate Faculty of  
North Carolina State University  
in partial fulfillment of the  
requirements for the Degree of  
Doctor of Philosophy

Public Administration

Raleigh, North Carolina

2009

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## **BIOGRAPHY**

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Mr. Freeman earned an MBA from Duke University, an MPA from NC State University and a BS in business administration from the University of North Carolina-Chapel Hill.

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## **Chapter One**

### **Introduction**

This chapter begins with an introduction to the present study; the conceptual framework, statement of the problem, and significance, purpose and organization of the study are also included.

The knowledge-based economy of the 21st century brings with it the challenges of preparing a workforce for a globally competitive marketplace driven by dynamic and rapidly changing technologies. According to U.S. Chamber of Commerce President and CEO, Thomas Donohue (2007), “It's perfectly clear that the toughest, most important competitive race in the...worldwide economy will be the global race for talent and workers.” America's workers—the essential ingredient—cannot rely on the manufacturing-driven approaches to workforce training of the past. The need for highly skilled workers, particularly those with technology skills, is growing; and the need for specialized training and—in the case of the aging worker—retraining is significant. Successful organizations will respond to these challenges by engaging their workers in a process of continuous learning that will support maximum flexibility and allow the organization to adapt quickly to market demands. Competitive advantage can only be achieved and sustained if such organizational investments in human capital are a priority.

Private companies in the U.S., increasingly realizing that training is essential to future organizational performance responded in 2007, for example, by spending over \$134 billion dollars on employee learning and development (ASTD, 2008). Although

comparable information for government and nonprofit organizations is not available, such information is unlikely to reveal that training expenditures made by public organizations are larger than private investment. Such training investments cannot be considered successful, of course, unless workers are able to transfer to the workplace the knowledge, skills, and attitudes they have learned in the classroom, and unless these newly acquired abilities have a positive organizational impact (Alvarez, Salas, & Garofano, 2004; Ford & Weissbien, 1997; Holton, 2005). Training professionals making the case for continued training investment will thus be well advised to focus on the proper assessment of training effectiveness.

Training effectiveness, a broad concept rooted in social-cognitive theory, refers to the individual and situational processes that occur before, during, and after training—processes that influence the likelihood that training will be transferred to the workplace (Kraiger, Ford, & Salas, 1993). Training-effectiveness models suggest that understanding these individual and situational variables provides insight into why training did or did not achieve its intended goal. There are hundreds of personal and environmental factors that could undermine an otherwise successful training (Alvarez, Salas, & Garofano, 2004; Mathieu, et al. 1993). Training might not be transferred, for example, if the trainee's supervisor did not support the transfer or if the trainee simply was not sufficiently motivated. Models of training effectiveness attempt to identify these factors and understand their impacts on training goals (Mathieu, et al.1993.)

There are two important problems facing the training industry, namely that practitioners do not adequately assess training effectiveness (ASTD, 2008) and, until quite recently, researchers have not provided them with effective models for doing so (Tannenbaum & Yukl, 1992; Salas & Bowers, 2001; Alvarez, Salas, & Garofano, 2004). Because researchers have given little attention to the relationships between individual factors and training effectiveness, few of their findings can be used on a practical level. Each of these challenges is discussed further below.

Despite a long history of suggested approaches to training evaluation, the American Society of Training and Development (ASTD, 2008) recently reported that the targets and types of evaluation techniques vary nationwide (ASTD, 2008). The data from ASTD's Benchmarking Service, which includes standard information from over 5000 organizations, reveals that participants' immediate post-training reaction and cognitive learning are assessed most often (91% and 51% of the time, respectively) and that learning transfer and organizational impact are evaluated far less often (23% and 10% of the time, respectively).

If practitioners have been incomplete in their assessment of learning transfer and organizational impact, training researchers have been almost as incomplete in their study of the motivational variables that influence training effectiveness (Colquitt, LePine & Noe, 2000; Alvarez, Salas, & Garofano, 2004). Training literature has evolved from Kirkpatrick's (Kirkpatrick, 1977a; Kirkpatrick, 1977b) Four Levels of Training Evaluation to the studies of multidimensional models debated in a variety of human

resource development, educational psychology, and organizational psychology publications (Alvarez, Salas, & Garofano, 2004; Baldwin & Ford, 1988; Holton, 2005; Noe, 1986). These models go beyond the training room and reflect the importance of individual and situational variables when assessing overall training transfer and effectiveness. A well done training can be ineffective if individual and situational variables undermine the learning and transfer processes. Research related to age, education, cognitive ability, conscientiousness, emotional stability, extraversion, peer support, supervisor support, and other transfer-climate factors is well represented in the literature. While these studies provide insight into a few specific individual differences, little attention has been given to personal goal orientations in general (Colquitt, LePine, & Noe, 2000; Ford & Weissbien, 1997; Kraiger & Ford, 2007); and there are no studies that have used models of training effectiveness to study the influence that personal goal orientations have on the outcomes of federally-funded trainings. Thus a number of unanswered questions remain, questions regarding in particular the impacts of such individual differences and their implications for training effectiveness. The present study attempts to answer some of these questions by studying paid employees of homeless service organizations attending training programs offered by the U.S. Department of Housing and Urban Development (HUD).

### **Conceptual Framework**

Elliot and McGregor's (2001) achievement goal theory and Bandura's (1977a, 1977b) theory of self-efficacy provide the conceptual framework for the present study.

Three separate constructs of personal goal orientation are used to help predict changes in post-training self-efficacy. Figure 1 illustrates the relationship between the personal goal orientations of HUD trainees and post-training self-efficacy.

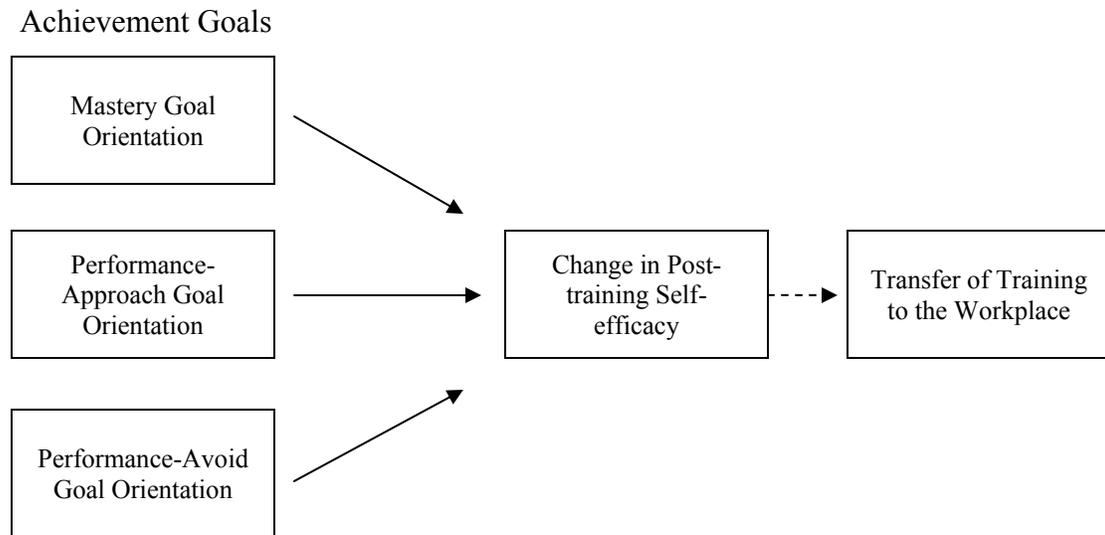


Figure 1. The Relationship between Goal Orientations, Self-Efficacy and Transfer

Achievement goal theory focuses on why individuals act the way they do in achievement situations. Dweck and Wortman (1982) wondered why some learners react to obstacles as if they were a personal condemnation, while others view the same phenomena as a welcome challenge. She suggested that some viewed achievement situations as tests of their competence, while others see the same opportunities as a means of learning. Referred to as “goal orientations,” these patterns of beliefs and feelings about success, effort, ability, errors, feedback, and standards of evaluation provide a lens

through which achievement situations are viewed (Elliot, 2005, p. 57). Goal orientation is concerned, for instance, with why a trainee would want an “A” on an end-of-course exam or why producing 10 more computers or 50 more cars is important. Including goal orientation as an aspect of motivational theory is important, as doing so provides insights into the various self-regulatory processes. Individuals with a learning or mastery orientation are interested in cues that show progress in learning; they will generally orient their approach to learning around deeper, processing strategies. On the other hand, individuals with a performance orientation are interested in looking good when compared to others. This desire for superiority can lead, for example, to an individual’s monitoring the grades or work of other learners and adjusting his or her motivation and cognitive efforts as necessary to outperform them (Boekearts, 2005). There are three primary goal orientations - mastery, performance approach and performance avoidance – that are more fully discussed in the following chapter.

Self-efficacy theory also contributes significantly to the conceptual framework of this study. Bandura (1977a, 1997b) defined self-efficacy as “people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances.” “It is concerned,” Bandura continued, “not with the skills one has, but with judgments of what one can do with whatever skills one possesses.” More simply, self-efficacy can be understood as an individual’s “can-do” attitude toward completing certain tasks at specific levels of performance.

Using changes in post-training self-efficacy as the dependent variable in this study is important for two primary reasons. First, it supports a new multi-faceted view of learning outcomes. Drawing from Bloom's (1956) and Gagne's (1984) taxonomies, Kraiger, Ford, & Salas (1993) proposed three categories of learning outcomes: cognitive, skill-based, and affective. Figure 2 represents an overview of these three learning outcomes and their constructs. Self-efficacy is presented as a key affective learning outcome.

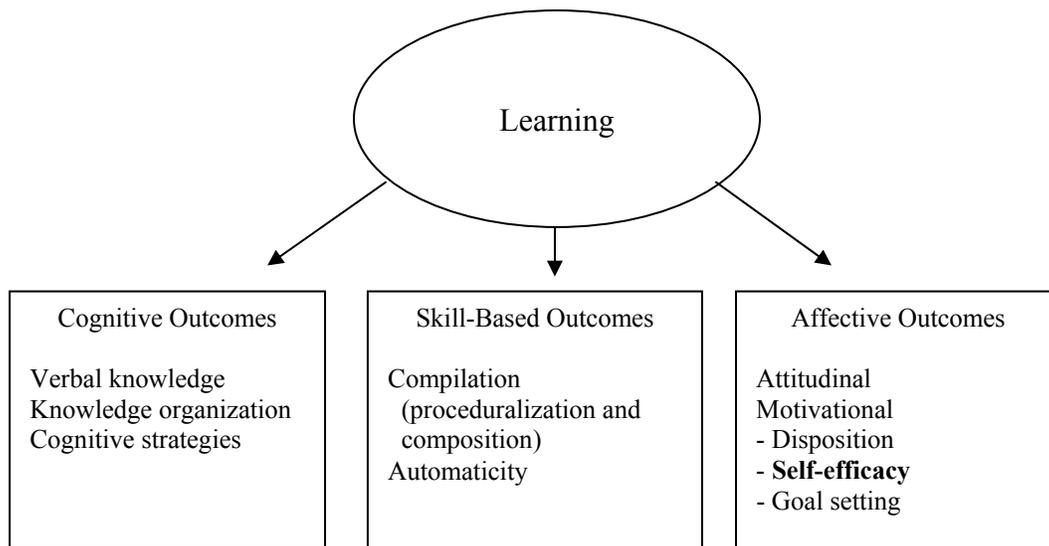


Figure 2. Classification Scheme of Learning Outcomes (Kraiger, Ford, & Salas, 1993)

The second reason that post-training self-efficacy is being used as a variable in this study is that numerous researchers have reported positive relationships between post-training self-efficacy and such training outcomes as cognitive learning, training

performance, and transfer performance: cognitive learning (Martocchio, 1994; Martocchio & Dulebohn, 1994; Martocchio & Judge, 1997); training performance (Martocchio & Dulebohn, 1994; Mathieu, Martineau, & Tannenbaum, 1993); transfer performance (Ford, Smith, Weissbein, Gully, & Salas, 1998). The linkages between post-training self-efficacy—a proximal training outcome—and other more distal outcomes, such as transfer and organizational impact, suggest that using this construct as the dependent variable expedites training effectiveness.

Theories of achievement goals and self-efficacy provide an understanding of how individual goal orientations can influence post-training self-efficacy, thereby impacting overall training effectiveness in HUD-sponsored programs. The present study is unique in that no research has been conducted among homeless-services professionals to assess relationships between the three goal orientation constructs and post-training self-efficacy.

### **The HUD Context**

Greater accountability in the federal government requires that HUD maximizes training effectiveness; a documented positive relationship between training expenditures and enhanced performance among federal grantees is needed. Ultimately, positive community impacts are the desired outcome.

HUD is required to meet the standards of the Government Performance and Results Act (GPRA) of 1993, standards that require all Federal agencies to establish goals and objectives for use in measuring achievements. To meet its obligation to assess program performance, HUD now requires grantee organizations receiving funding under

the HOME, Community Development Block, and Homeless Programs to submit a logic model and to use it as a framework for performance measurement. A logic model, which is basically an illustration of how a program works, connects the program's theoretical assumptions with program inputs such as (1) financial, human, and physical resources; (2) program activities, including the processes and actions of the program that are intended to bring change; (3) outputs that are proximal to the activities and may include types and levels of services to be delivered; (4) outcomes that are more distal to the activities, ranging from short-term changes—changes in the program participants, for example—to long-term outcomes associated with changes in community conditions (Kaplan & Garrett, 2005; Savaya & Waysman, 2005). The amount of funding available from HUD in 2008 that will require logic model submission exceeds \$1.5 billion.

The larger context of a logic model is important; a strategy that will allow training professionals and researchers to better understand how increases in self-efficacy—the dependent variable in the present study—can conceptually impact other important program outcomes. The logic model illustrates, for example, how post-training self-efficacy is theoretically connected to such proximal outcomes as the transfer of training to the workplace as well as to more distal outcomes such as decreases in the number of holes individuals. The ultimate impact of proximal action is a longer-term community improvement that is hard to even partially attribute to a specific series of training; logic models allow for these relationships to be visualized however (Figure 3).

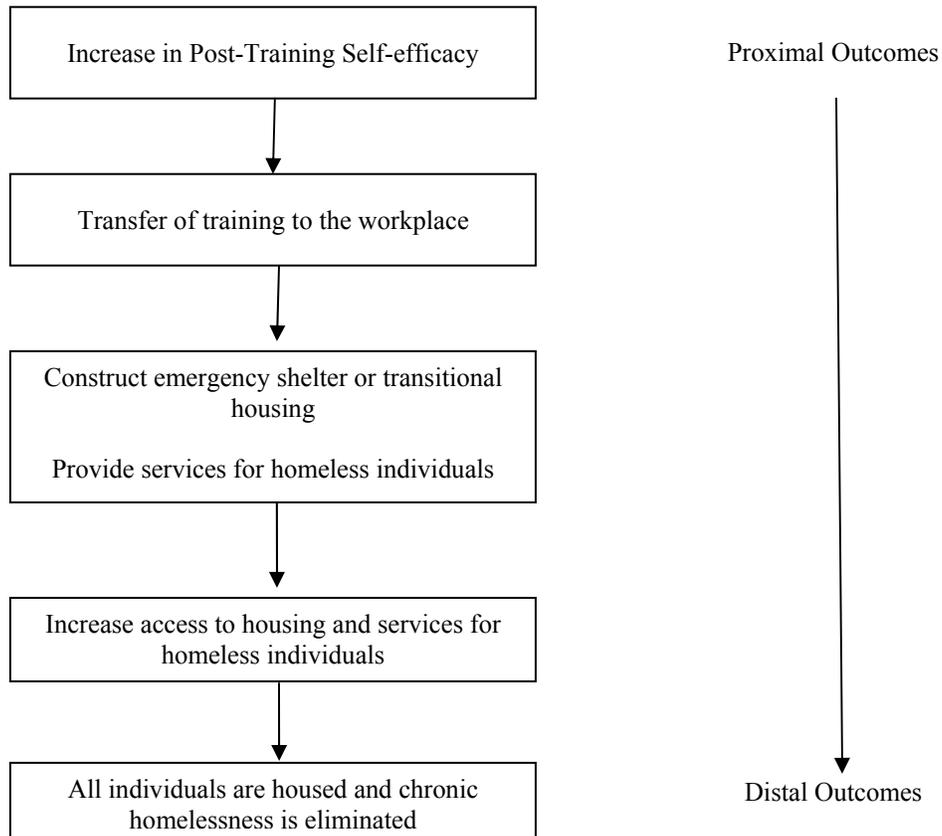


Figure 3. Relationship of Study to Ultimate Community Impact

Now is the ideal time to study these relationships more closely since federal training budgets – which are often viewed as discretionary - will certainly be more intensely scrutinized given the recent economic turmoil in the world marketplace. Although research related to the influence of achievement goals on post-training self-efficacy is non-existent among homeless-services professionals, significant related

research has been conducted in non-public settings, most notably in the college classroom and, to a much lesser extent, in the private sector.

### **Statement of Problem**

The partnership between governments and homeless service organizations has proven to be a prerequisite to much of the national emphasis on eliminating chronic homelessness. The popularity of this community-driven approach has led to a significant reliance on local nonprofits and governments to administer federal and state homeless programs at a local level.

The unit of analysis for this study was the paid employee of an organization that assists persons who are homeless or at risk of becoming homeless. The organization must also have received funding—directly or indirectly—from the U.S. Department of Housing and Urban Development (HUD) and must be presently administering federal homeless assistance. In 2008, three hundred and sixty three state and local governments received approximately \$160 million in funding from the Emergency Shelter Program, and approximately 6,300 projects were awarded approximately \$1.6 billion in funding through HUD’s competitive homeless programs; the projects are sponsored primarily by nonprofit service organizations (HUD 2009). The thousands of employees working for these government and nonprofit organizations were the targeted population for the present study.

Unfortunately, the ability of many of these organizations to perform has been seriously questioned among funders, including HUD. This lack of capacity has been

sited as a major cause underlying poor performance; the term “organizational capacity” however, has historically not been adequately defined. In an attempt to develop a shared definition, grantmakers have defined nonprofit capacity – albeit a bit abstract - as “the ability of the organization to fulfill its mission through a blend of sound management, sound governance, and a persistent rededication for achieving results” (Grantmakers for Effective Organizations 2003). In the field, capacity building is often referred to as organizational development, technical assistance, or management training; in any case funders have long felt that organizational capacity is a prerequisite for programmatic success. In support of this conclusion, most executives of high-performing organizations believe that only well-managed groups will be effective, and funders have significantly increased the amount of resources available for capacity building (Light, 2004; HUD, 2009b). As mentioned, the U.S. Department of Housing and Urban Development (HUD) has recognized the lack of capacity of many grantees that administer HUD programs at the local level (HUD, 2009b). These organizations often lack capacity in the areas of leadership and vision, management and planning, fiscal planning and practice, operational support (Fredericksen & London, 2000), and knowledge of specific programs and activities (Glickman & Servon, 1998). In response, HUD provides technical assistance – that includes direct consultations and group training - in an effort to enhance the capacity of community development professionals and HUD grantee organizations. In support of their affordable housing, community development, and homeless programs, HUD has provided over one billion dollars since 1993 for technical assistance for local

HUD grantees—many of which are nonprofits (HUD, 2009b). An important note is that nonprofit organizations deliver a larger share of the health and human services financed by government agencies than do public agencies (Fredericksen & London, 2000; Keyes et al., 1996).

The problem is that HUD does not adequately assess the effectiveness of its capacity-building efforts. Calls for more accountability on federally sponsored programs and increased return on the investments associated with these programs provide HUD with a unique opportunity to reevaluate and improve the community development technical assistance programs it has been offering since 1993 (McCool, 2002). One area in particular need of improvement has been the agency's approach to assessing the effectiveness of its program training. While recent researches have led to the creation of a number of comprehensive and robust models for use in such assessments (Salas & Bowers, 2001), HUD continues to employ comparatively limited, institutionalized methods. HUD trainings might benefit especially from the adoption of an approach that takes into account the impact that individual differences, specifically goal orientations, have on post-training self-efficacy and overall training effectiveness – recall the earlier discussion in the conceptual framework section that suggests that post-training self-efficacy is positively linked to training effectiveness. Awareness of the ways that individual differences promote or inhibit training effectiveness could well lead to improvements in the design and structure of training programs.

## **Significance of the Study**

This study is significant for two reasons. First, it will create new baseline information regarding the post-training self-efficacy of employees of homeless-services organizations. This information may also provide valuable insights into the overall effectiveness of federal training programs for a specific population. Although training investments are made in all three sectors—private, government, and nonprofit—private-sector organizations receive the bulk of the attention when it comes to training and development issues (Cosier & Dalton, 1993). In fact, professional associations tend to report on training practices from a private-sector perspective. The ASTD Benchmarking Survey, for example, is based on results reported primarily from large organizations, only a small percentage of which were from the government or nonprofit sectors (ASTD, 2008). Similarly, the American Management Association’s survey research is restricted to large private organizations (Jacobson, Rubin, & Selden, 2002), and the ASTD’s 2008 State of the Industry Report is based on a survey sample in which only 2% of the organizations considered were public (ASTD, 2008). Practitioners rarely refer to the training conducted in smaller, nonprofit organizations and local governments, and the same seems true of the academic literature.

A review of the past 10 years of human resource development, public administration, and nonprofit literature yields no training-related research within the context of nonprofit organizations and very little research related to local governments.

A second contribution of the present study is that it addresses goal orientation, which—although it is considered an important contributor to training effectiveness—has received limited attention in training research. Many researchers have hypothesized that a mastery goal orientation to training is more likely to result in superior training effectiveness (Ford, Smith, Weissbein, Gully, & Salas, 1998; Schmitt & Ford, 2003; Elliot, 1997; Ames & Archer, 1988; Grant & Dweck, 2003; Wolters, 2004; Urdan, 1997). Researchers (Ames & Archer, 1988; Kozlowski, et al. 2001) posit further that—if training professionals determine that few individuals in a given training group have such an orientation—these professionals might consider structuring their training so as to optimize the likelihood that more individual learners will assume a mastery approach to the training. They might, for example, use role playing as a primary activity in lieu of testing for declarative knowledge. Of course, before researchers begin adopting different training goal structures to induce mastery goal orientations, the relationship between individual goal orientations and training effectiveness in federal training programs must be tested. (Historically, such research has been conducted only in the classroom and in limited populations of adults.) (Chiaburu & Marinova, 2005; DeShon & Gillespie, 2005; Payne et al., 2007; Tziner, Fisher, Senior, & Weisberg, 2007). By focusing on the individual goal orientations of homeless-services professionals attending HUD-funded training and the relationship of these orientations to training effectiveness, this study should provide some of that testing.

## **Purpose of Study**

The purpose of the study was to better understand how the goal orientations of employees of homeless-service organizations attending HUD-funded training affected changes in post-training self-efficacy (post training) – an indicator of training effectiveness. Three categories of goal orientation—mastery, performance-approach, and performance-avoid—served as independent variables, while changes in post-training self-efficacy served as the dependent variable.

## **Limitations of the Study**

Potential limitations related to the non-random nature of the study included potential differences in the treatment and control groups, the possibility of not considering significant control variables, and the use of self-report measures. First, the self-selected group of participants for the treatment and control groups could have been significantly different demographically. However, statistical analysis was conducted to determine if any significant differences existed between the groups; no significant differences in means were noted between the treatment and control groups on the demographic variables collected for the present study. Second, several other control variables (covariates) that have been shown to influence training outcomes were studied, including several demographic questions and three transfer system variables – the opportunity to use learning, motivation to transfer, and supervisory support. Although the number of control variables has been limited to ensure parsimony in the model, there is a risk that a significant control variable was not included and distorts the relationships

between the variables under study. This is not a study of on-the-job training where there is limited time between the training and actual job tasks. The training in the present study was conducted outside of the workplace and there are many factors on the job that could impact the actual transfer of training; supervisory support and opportunity to use the learning are two examples of such potential barriers. However, other transfer system variables such as peer support were not considered in the present study's design. The present study suggests that changes in post-training self-efficacy are positively related to actual transfer performance; these potential organizational barriers to transfer however make it difficult to make any assumptions about the future level of transfer in any specific organization. Finally, the information collected in this study was self-reported. For this reason, although each of the included scales had high reliabilities and were pilot tested, there will be—as with all self-reported measures—a potential for bias.

### **Organization of the Study**

The remainder of this dissertation is organized into four chapters. Chapter 2 “Literature Review”, presents a review of the literature related to several foundational theories plus achievement goal theory and self-efficacy theory. Chapter 3 “Methods” discusses the research design, the measures and instruments, threats to validity, and the methods that were used for data analyses. Chapter 4 “Results” describes the result of the data analysis. Chapter 5 “Discussion, Implications and Conclusions” presents a discussion of the findings, identifies implications and provides specific recommendations for consideration.

## **Chapter Two**

### **Literature Review**

Since the turn of the 20th century, the United States has seen dramatic growth in the number of both training practitioners and training researchers. Training research in particular has expanded in the last two decades, developing a solid theoretical foundation with multiple conceptual models available to guide research agendas. The first section of this chapter explores social-cognitive theory and achievement motivation theory that emerged in the 1960s and serve as the theoretical foundations for contemporary models of training effectiveness addressed in this chapter. The second section will focus on the achievement goal literature and will present a complete discussion of each of the independent variables and relevant goal orientation constructs. The third section will explore the theory of self-efficacy, the dependent variable for this study. To illustrate how the constructs have been used together in the existing research, a conceptual literature map is presented in Figure 4.

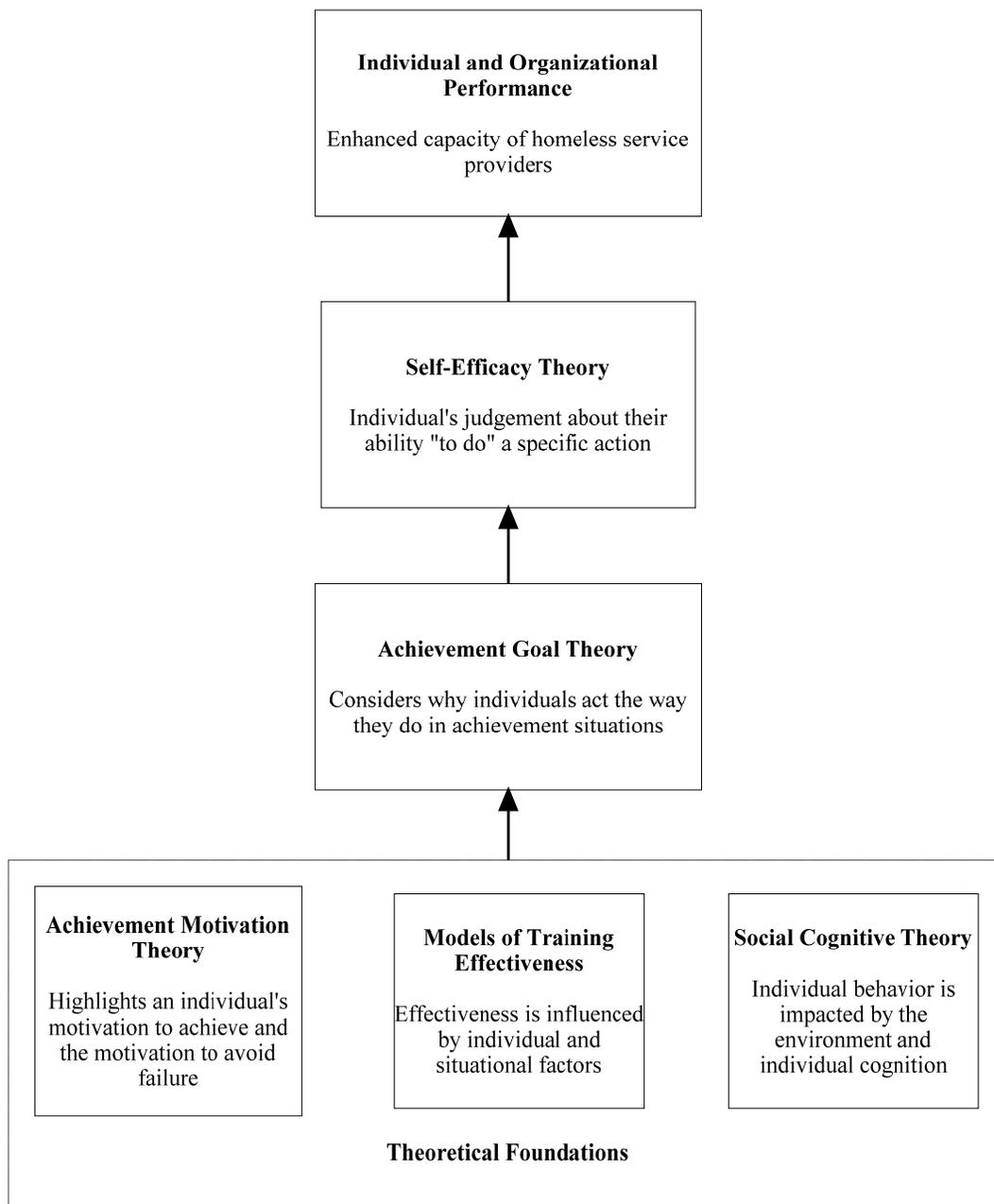


Figure 4. Concept Map of the Literature

## **Theoretical Foundations**

This section will highlight the theories that are foundational to the subsequent discussion of achievement goals and self-efficacy. The foundational theories discussed are social cognitive theory, achievement motivation theory, and various models of training effectiveness.

### ***Social cognitive theory.***

Social-cognitive theory (Figure 5) posits a triadic, interactive relationship between individual cognition, the environment, and individual behavior (Bandura, 1977a, 1977b). Consistent with behaviorist beliefs, social-cognitive theory suggests that a person's environment impacts his or her actions. Social-cognitive theory also suggests, however, that behavior is impacted by cognitive antecedents as well. That is, unlike behaviorism, social-cognitive theory suggests that individual cognition mediates the relationship between stimulus and response. The social-cognitive approach to motivation focuses on how individuals deal cognitively with their social encounters and how these cognitions influence individual action. Individuals are viewed, that is, as having control of their actions and, therefore, possessing free will and volition. The introduction of social-cognitive theory revolutionized the study of both learning and motivation. In fact, with the introduction of Bandura's concepts in 1977, research reliant on the philosophy of behaviorism all but disappeared from the literature. Empirical research has since confirmed Bandura's theories, and most researchers agree that cognitive variables

mediate the relationship between an individual's environment and his or her behavior (Lathem & Pinder, 2005).

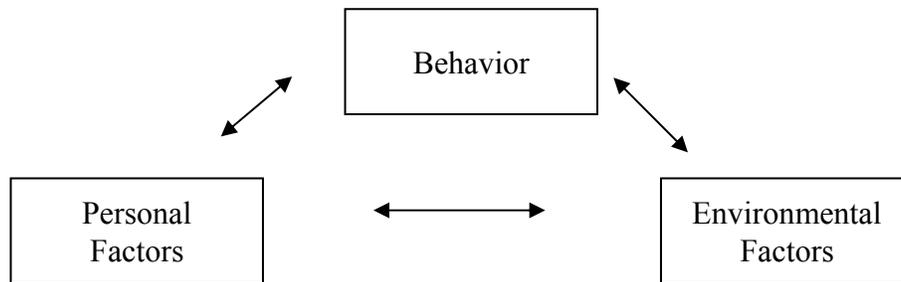


Figure 5. Overview of Social Cognitive Theory (Pajares & Schunk, 2002)

In this theory, Bandura (1977a, 1977b) emphasizes the importance of observing and modeling others as a means of learning—as when, for example, a television commercial suggests that driving a certain car will make us happier and more attractive and we model the behavior shown in the commercial by buying the product being advertised. A central tenet of social cognitive theory is the notion that people form assumptions about their capability, assumptions that, in turn, impact their perceptions regarding the control they have over their environment when pursuing goals. Bandura suggested that this perceived self-efficacy actually has a greater impact on behavior than does what people are actually capable of achieving. The concept of self-efficacy plays a major role in this study and is examined more extensively later in this chapter.

***Achievement motivation theory.***

Dweck's (1986) seminal work on goal orientation was grounded in the social-cognitive tradition and relied heavily on Atkinson's (1964) achievement-motivation

theory. “Achievement motivation refers to motivation in situations in which individuals’ competence is at issue” (Wiegfield and Eccles, 2002, p.1). Achievement motivation theory (Atkinson, 1964) rests on two behavioral constants: the motivation to achieve and the motivation to avoid failure (sometimes referred to as the hope for success and the fear of failure). The motivation to achieve stems from an individual’s need to experience pride, whereas the motivation to avoid failure is based on the need to avoid shame. Atkinson theorized that, when the motivation to achieve is greater than the motivation to avoid failure, the resultant achievement motivation is strong. When given the opportunity, individuals having this motivation set will seek out achievement-oriented activities. Conversely, individuals who are more motivated to avoid failure than they are to achieve will have low achievement motivation. Such individuals, when given the opportunity, will avoid achievement-oriented activities.

According to Atkinson (1964), the motivation to achieve consists of three factors: the need for achievement, the probability or expectation of success, and the incentive value of success. The motivation to achieve is expressed as the following function:  $f((\text{Need for Achievement}) \times (\text{Expectancy of Achievement}) \times (\text{Incentive Value of Achievement}))$ . Atkinson suggested that the need for achievement is a stable personality trait and defined this need as the “capacity to express pride in accomplishment” (Atkinson, 1964, p. 214). Likewise, the incentive value of success is the pride associated with a specific accomplishment. In Atkinson’s scheme, the motivation to avoid failure also consisted of three factors: the need to avoid failure, the expectancy of failure, and the

incentive value of failure. These factors are expressed in the function  $f((\text{Need to Avoid Failure}) \times (\text{Expectancy of Failure}) \times (\text{Incentive Value of Failure}))$ . The need to avoid failure stems from an individual's capacity to experience shame as a result of failure. Individuals exhibit expectancy of failure when they feel there is a high probability they will fail in pursuit of a goal. Finally, the incentive value of failure is roughly commensurate with the negative affect of shame.

The Atkinson achievement-motivation theory was one of the first expectancy-value theories that embraced the tenets of social-cognitive theories of motivation. Based on these interacting social-cognitive processes, individuals make action decisions that will tend to approach success and avoid failure—as with the pain/pleasure principle suggested by Freud (1922) and considered a central concept underlying goal orientations.

***Models of training effectiveness.***

Interest in training, which began to grow in the United States in the early 1900s, has evolved into a field of inquiry with comprehensive theoretical frameworks, concepts, and constructs and these developments have led to significant amounts of empirical research (Salas & Cannon-Bowers, 2001). This theoretical explosion has provided the much-needed organized framework in which systematic research can flourish. As a result, training research now enjoys a robust and focused exchange of ideas and theories, thereby promoting the discussion and testing of organizational learning (Salas & Cannon-Bowers, 2001). Central to the emergence of this increased research activity is Bandura's

Social-Cognitive Theory and theories of motivation, such as Atkinson's Achievement Motivation Theory.

In their review of cognitivist training literature, Tanenbaum and Yukl (1992) noted that the use of training continued to increase at a rapid rate. They indicated that social-cognitive theoretical frameworks developed in this cognitivist era helped trainers as well as researchers better understand both the process of learning and the transfer of this learning to the workplace. The parameters employed when producing and assessing training effectiveness were also significantly expanded to include trainee characteristics, training design principles, and work context. Finally, training research was also expanded to include the study of training considered as a system within a larger organizational context. Several key assumptions underlie the systems approach: organizations are subject to external environmental influences (Katz & Kahn, 1966); subsystem events are embedded in the larger systems context or network of relations (Lewin, 1951); and the understanding of complex systems events is not enhanced by reducing them to their individual elements (Von Bertalanffy, 1975, 1980). Tanenbaum and Yukl (1992) concluded their study by challenging the research community to further explore the ways that individual cognitive concepts apply to training and to continue paying greater attention to training as a system embedded in an organizational context. This new emphasis was driven by the field's dramatic shift—as discussed above—away from its mechanistic roots in behaviorism toward a more humanistic and cognitive-based approach.

The most recent review of the training research literature has been conducted by Salas and Cannon-Bowers (2001). They note that there “has been an explosion of theoretical, methodological, and empirical work in training research” (p. 489). Salas and Cannon-Bowers observed importantly that the distinction between training effectiveness and training evaluation has become clearer. Training effectiveness research, which looks at the training intervention from a social-cognitive perspective, is concerned with why training works and is “macro” in nature. In this approach, training success depends not only on the method used but on the organization’s positioning, support, and reinforcement of training and learning; the trainees’ focus and motivation; and the mechanisms used to ensure the transfer of newly acquired KSAs to the job (Kraiger, Ford & Salas, 1993).

The intensity of the research of recent years has produced newer models of training evaluation and effectiveness, models that incorporate those individual or situational variables Bandura identified as the social-cognitive processes that influence motivation and action. Martineau and Mathieu provide a good summary of selected variables that illustrate this point (Mathieu, Martineau, & Tannenbaum, 1993). These variables include:

***Individual influences.***

1. Demographics represent those unchanging and distinguishable variables such as age, race and gender. The research on the impact of demographics on training outcomes has been inconsistent to date.

2. Cognitive ability refers to an individual's intelligence or scholastic aptitude.

Again, the research in this area has been mixed with no clear relationship between cognitive ability and training outcomes being identified.

3. Education refers to the level of formal education received by an individual.

Although some of the research suggests that "more is better", the results have varied depending on the training outcomes being measured. Those with more education tend to do well on tests, etc. but their superiority in terms of training transfer has not been established.

4. Work experience related to the content in the training has been positively

associated with higher training motivation, while the link to transfer has not been shown.

5. Personality is often discussed in terms of the "Big 5" framework" that includes

the personality dimensions of extroversion, conscientiousness, openness to experience, emotional stability, and agreeableness. Research has shown that extroversion, conscientiousness, and openness to experience have all been linked to higher training proficiency. Research on emotional stability and agreeableness has been limited.

6. Goal orientation refers to an individual's tendency to view achievement situations

as an opportunity to learn (mastery orientation) or as an opportunity to demonstrate their capabilities (performance orientation). Research suggests that mastery oriented individuals generally illustrate higher training motivation than performance oriented individuals.

7. Job involvement concerns the extent in which an individual is psychologically attached to their job. Individuals with high job involvement are actively involved in their jobs and consider their job central to their self concept. The research suggests that individuals with high job involvement respond most favorably to training that is central to their present job.

8. Career-related attitude refers to the extent in which an individual participates in career planning and has an understanding of their strengths and weaknesses. Individuals that participate in career planning and attend training that allows them to gain skills beyond that needed in their present jobs tend to illustrate higher levels of training motivation.

***Situational influences.***

1. The opportunity to use and availability of adequate resources in the workplaces impacts the extent in which individuals can practice what they have learned. Lack of time or money or other tangible resources necessary to use the training has been shown to significantly lessen trainee motivation and training transfer.

2. Social-psychological influences include the intangible workplace factors such as organizational culture and supervisor and peer support. An organizational culture that is not supportive of training transfer accordingly inhibits training transfer. Likewise, lack of support from coworkers and supervisors negatively impacts training transfer.

3. Mandatory versus voluntary attendance at a training program can also be considered a situational constraint. Voluntary training generally leads to a higher

motivation to learn. However, mandatory training can impact training effectiveness differently depending on whether the training is perceived as manipulative or as a genuine effort on the part of the organization to move the organization forward as a whole.

Although the models presented in the following section may have more or fewer variables than Martineau and Matheiu suggest, all of the models are similar in that they recognize the importance of social-cognitive theory and the impact of individual motivational variables on training effectiveness.

***The Integrated Model of Training Evaluation and Effectiveness (IMTEE).***

The Integrated Model of Training Evaluation and Effectiveness (IMTEE) presented by Alvarez, Salas, & Garofano (2004) provides support for this study. The IMTEE is the only model that specifically identifies post-training self-efficacy in a manner consistent with Ford's Classification of Learning Outcomes, a critical paradigm on which the present study rests. Because of the IMTEE's specific attention to post-training self-efficacy and because it hypothesizes a relationship between post-training self-efficacy and the more distal training outcomes of transfer and organizational impact, it serves as a primary theoretical foundation for the research model tested in the present study.

The IMTEE (Figure 6) suggests that training programs should be viewed as existing within a larger organizational context and should take into account the affects of

both individual trainee characteristics and situational factors. The IMTEE has four levels. The top level consists of needs analysis, a critical part of any training. Needs analysis impacts all the other levels of the model (Kraiger, 2002; Alvarez, Salas, & Garofano, 2004). The second level includes three areas of evaluation originally proposed by Kraiger (2002): training content and design, changes in learners, and organizational payoffs. These three categories serve to organize the six evaluation measures outlined in level three. These six measures reflect the state of current research and take into account all of the measures suggested in all major models (Kirkpatrick, 1977; Holton, 1996; Tannenbaum & Yukl, 1993; and Alliger, Tannenbaum, Bennett, Traver, and Shotland, 1997). The six measures include reactions, post-training self-efficacy, cognitive learning, training performance, transfer performance and results. The model essentially suggests that (a) reactions are used to evaluate training content and design; (b) post-training self-efficacy, cognitive learning, and training performance are used to measure changes in the learner; and (c) transfer performance and results are used to assess organizational payoffs. Beyond these evaluative measures, the ITMEE's includes a fourth level, which incorporates individual, training, and organizational characteristics that impact training effectiveness before, during, and after the training. Of particular interest for the present study are two important relationships posited by the IMTEE: the direct relationship between individual characteristics, such as goal orientations, and post-training self-efficacy and the indirect relationship between post-training self-efficacy and transfer performance. Informed by these relationships, the present study looks at how individual

goal orientation impacts post-training self-efficacy, which in turn impacts both transfer performance—a proximal training outcome—and organizational results—the ultimate distal training outcome.

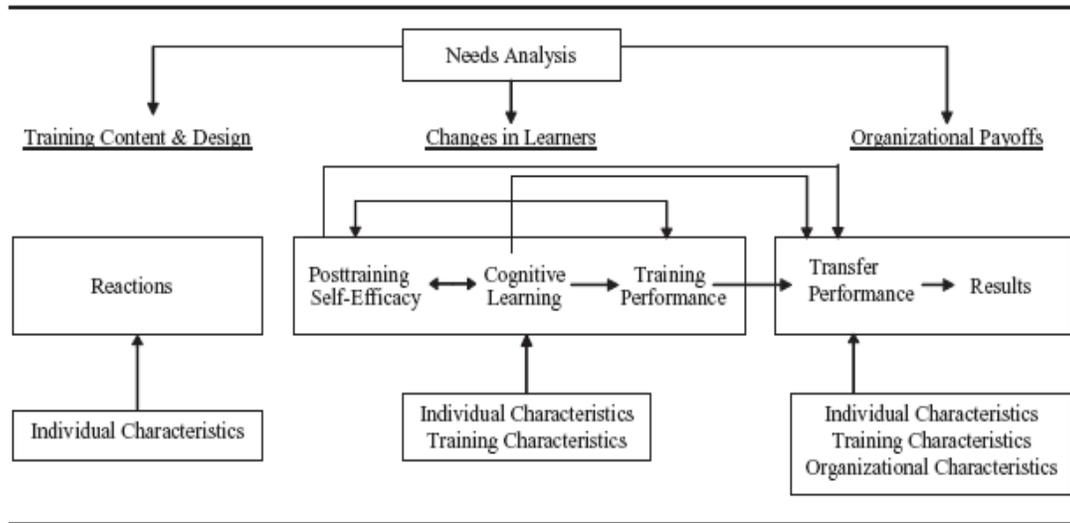


Figure 6. The Integrated Model of Training Evaluation and Effectiveness (Alvarez, Salas, & Garofano, 2004)

***Other models of evaluation and effectiveness.***

Similar to the IMTEE several other models recognized the importance of Bandura’s (1977a, 1997b) social-cognitive theory and individual motivational variables. Each of these models support the present study in one or more ways as described in this section.

***Noe's Model of Motivational Influences on Training Effectiveness.***

Noe (1986) was one of the first researchers to integrate motivation into a model of training effectiveness. Noe recognized that individual and situational variables interacted with and impacted the ability to use new knowledge skills and attitudes on the job. Locus of control, career and job attitudes, and reactions to skill assessment, for example, all influenced both the motivation to learn and training effectiveness. Noe also introduced the concept of environmental favorability, which presupposed two influencing factors: the availability of the tools needed to carry out the task on the job and the opportunity to use the new skills on the job. Noe hypothesized that environmental favorability also influenced the motivation both to learn and to transfer training, and thus importantly impacted training effectiveness. Secondly, Noe realized that, consistent with social-cognitive theory, individuals are volitional in their actions and are not simply products of their environments. Finally, Noe, recognizing that individuals draw on past experiences to create expectations about the future as Atkinson's Achievement Motivation Theory described, added an expectancy variable to his model.

***Baldwin and Ford's Model of Training Transfer.***

Building on Noe's model, Baldwin and Ford (1988) attempted to identify the intervening variables that promote or inhibit learning transfer. Their model suggests that post-training results can be significantly influenced by (a) the training design itself—because training based on difficult subject matters, as might be expected, is harder to implement on the job; (b) specific variables within the work environment—because

organizations that demonstrate a serious commitment to training and whose supervisors support trainees and the training process are more likely to see positive transfer results; and (c) trainee characteristics—which can include general intelligence, confidence in one’s ability to learn, motivation to learn, job autonomy and commitment, and the perception that the training is relevant and useful. Resting on a theoretical foundation similar to Noe’s, Baldwin and Ford’s model recognized the importance of individual and situational influences as well as the associated social-cognitive processes. Baldwin and Ford’s model went further, however. By defining motivation as a trainee characteristic that is general in nature, their model could incorporate most of the core motivational concepts. Baldwin and Ford thereby succeeded in further broadening the network of potential influences on training outcomes. Again, the emphasis on the influence of individual motivation on training outcomes is central to the present study.

***Mathieu and Martineau’s Model of Training Effectiveness.***

The model of training effectiveness and motivation developed by Mathieu and Martineau (1997) provides a comprehensive framework of the variables that contribute to training effectiveness as mentioned earlier in this chapter. Mathieu and Martineau (1997) also suggested that training programs should be viewed as existing in a larger organizational context and as interacting with individual and situational factors. By identifying specific personal and work-environment factors that interact with both the motivation to learn and the motivation to transfer learning to the workplace, they expanded traditional approaches to training effectiveness. Specifically, they suggested

that individual and situational characteristics influence pre-training motivation, which in turn impacts training outcomes and, eventually, work outcomes. They further posited that training program attributes can interact with the other variables at all levels throughout the process. As Mathieu and Martineau (1997) noted,

Participants enter and leave training with varying levels of motivation that will likely influence how much they learn, whether they transfer learning to the job and ultimately how successful the program is. It is important to consider the roles of individual and situational influences on trainees' motivation. (p. 194)

As with Baldwin and Ford's approach (1988), Mathieu and Martineau (1997) assumed a broad conception of motivation, including pre-training and post-training motivation, which allowed their model to draw on many of the seminal theories of motivation.

***Holton's HRD Model.***

The Holton model, first proposed in 1996, sharply criticized Kirkpatrick's four-level evaluation model (Holton, 1996). The Holton model conceptualizes key variables that interact with three training outcomes—learning, individual performance, and organizational performance. Holton did not agree that trainee reactions were a legitimate outcome. Instead, he considered reactions to be mediating influences on learning. Based on Noe's (1986) earlier research, Holton organized the key variables of his model into four major categories—ability, environment, motivation, and secondary influences.

Based on this conceptual approach, the Holton model identified several individual and situational based variables that his theory deemed to impact overall training effectiveness.

### **Independent Variables: Individual Goal Orientations**

Dweck (1999) offered the original theory of goal orientation as a partial explanation, other than cognitive ability, for differing levels of achievement among learners. Originally conceived of as a means of explaining these types of individual differences among students in the classroom (Diener & Dweck, 1980), goal orientation is considered a significant motivational variable in the field of applied psychology and is also an integral part of much achievement-motivation literature (DeShon & Gillespie, 2005; Kanfer, 1990).

Achievement goal theory focuses on why individuals act the way they do in achievement situations. Early research on achievement goals suggested that differences among individuals reflected their underlying reasons for selecting and pursuing specific types of goals, that is, their goal orientations. Dweck suggested that goal orientation lay on a single continuum with a learning orientation at one end and a performance orientation at the other. She suggested further that individuals with learning-mastery orientations are most interested in gaining competency and seeking out opportunities that promote learning, whereas performance-oriented individuals are interested in gaining favorable judgments of their competence and thus tend to avoid challenging situations (Dweck, 1986; Dweck & Legget, 1988; Elliot & Dweck, 2005). The construct of goal orientation logically evolved from research in school settings, where it was noticed that

children with similar abilities did not all perform or learn at the same level. Dweck posited that the learning differences among the children could be expressed in terms of two patterns of cognition-affect behavior: the maladaptive helpless response and the adaptive mastery-oriented response. As Dweck and Leggett (1988) note,

In short, in the face of failure, helpless children exhibited negative self cognitions, negative affect and impaired performance, whereas mastery oriented children exhibited constructive self instructions and self-monitoring, a positive prognosis, positive affect, and effective problem-solving strategies. Despite the fact that they had received identical tasks and earned identical task outcomes, helpless and mastery oriented children processed and responded to the situation in entirely different ways.

This section explores many of the emerging issues related to achievement goal research including the stability of the goal orientation construct.

### ***Task-specific goals versus goal orientations.***

It is important to understand the distinction between the two most commonly discussed aspects of goal theory: post-training goals and goal orientations (Boekaerts et al., 2005; Pintrich, 2000). The key difference between these two is that post-training goals relate to the specific outcomes an individual hopes to achieve, whereas goal orientation is concerned with why an individual pursues a certain task. The desire to make an “A” on an end-of-course exam is a good illustration of a post-training goal in a training context. This type of goal is most similar to the organizational goal setting

discussed by Latham & Locke (2007). Producing 10 more computers each week or 50 more cars each month are also typical examples of post-training organizational goals (Boeckarts et al., 2005).

Goal orientation relates not to specific goals but to an individual's general approach to tasks (Dweck & Leggett, 1988). As discussed earlier, goal orientation is concerned with why a trainee would want an "A" on an end-of-course exam or why producing 10 more computers or 50 more cars is important. Including goal orientation as an aspect of motivational theory is important, as doing so provides insights into the various self-regulatory processes. Individuals with a learning or mastery orientation are interested in cues that show progress in learning; they will generally orient their approach to learning around deeper, processing strategies. On the other hand, individuals with a performance orientation are interested in looking good when compared to others. This desire for superiority can lead, for example, to an individual's monitoring the grades or work of other learners and adjusting his or her motivation and cognitive efforts as necessary to outperform them (Boeckarts, Maes, & Karoly, 2005). Historically, goal-setting research began in the field of organizational psychology, while goal-orientation theory is a product of educational psychology. Only in the recent past have the results of these two separate research streams begun to intersect importantly in the motivation literature (Seijt, Latham, Tasa, & Latham 2004).

***Goal orientation terminology.***

Dweck (1986), Nicholls (1984), and Ames and Archer (1988) have each suggested appropriate terminology when referring to goal orientations. Nicholls was conducting very similar research at the same time as Dweck was doing hers. Nicholls (1984) also developed a theory regarding an individual's orientation toward achievement settings, characterizing these orientations as task involvement and ego involvement. He suggested that individuals with a task-involvement orientation were interested in demonstrating ability, while those with an ego-involvement orientation were interested in seeking mastery as well as developing ability. Nicholls' concept of task involvement resembled Dweck's performance orientation, and his ego involvement was similar to what Dweck called learning orientation. The work of Dweck (1986) and Nicholls (1984) considerably raised the level of achievement-goal research done in the 1980s. Of special interest during this time were articles published by Ames and Archer (1988), articles that consolidated the findings of Nicholls and Dweck, as well as others. They succeeded in reconciling similar, yet distinct, terminologies, suggesting, for example, that researchers adopt the terms "mastery orientation" (in lieu of Nicholls' "ego involvement" and Dweck's "learning orientation") and "performance orientation" (in lieu of Nichol's "task involvement"). Although, multiple terminologies continue to be used in research, the Ames and Archer's (1988) terminology of mastery and performance orientations are dominate and will be used throughout the present study.

### *Goal orientations: two, three or four?*

The present study utilizes a trichotomous framework that includes a mastery goal, focused on the development of competence; a performance-approach goal, focused on the attainment of normative competence; and a performance-avoid goal, focused on the avoidance of normative incompetence (Attenweiler & Moore, 2006). A dichotomous framework that included a mastery orientation and performance orientation (without the approach and avoid distinction) had been the dominant approach in the early to mid 1990s, especially in the educational, sport psychology, and, eventually, the industrial/organizational psychology fields. Some researchers (Elliot, 1999) wondered why the dichotomous models contained only approach mechanisms when Atkinson's (1964) achievement motivation theory had suggested that both approach and avoidance were necessary. Elliott (1994) revisited the empirical research on performance orientation to assess whether a bifurcation of the performance orientation into a performance-approach orientation and performance-avoid orientation would explain the variance associated with the single performance-orientation measure. Elliott's reassessment of the research led him to believe that a bifurcation would be fruitful. Recognizing the successful use of approach–avoid mechanisms in motivational psychology, Elliot (1994) proposed the trichotomous framework that is being used in the present study. The trichotomous framework had been used in more than 60 studies; and the importance of differentiating the performance-approach from the performance-avoid

dimensions was well-documented. Additionally measures for each of the three scales had been confirmed and the benefits had been illustrated (Elliot 1994).

Elliot (2005) has recently suggested that competence is the core of achievement motivation, and that, over time, achievement motivation should be referred to as competence motivation. Elliot (2005) contends that achievement has been an ill-defined concept and that competence can be defined more precisely. Consistent with a commonly accepted definition, he views competence as a condition or quality of effectiveness, ability, sufficiency, or success. Conceptualizing competence in the traditional achievement-goal framework may be useful for understanding how research on achievement goals is moving toward a 2x2 framework, with four possible types of achievement goals. The 2x2 framework is based on two factors: the way an individual defines competence and the individual's desire to achieve competence. Figure 7 illustrates how these two dimensions result in a 2x2 framework.

Table 1. 2x2 Achievement Goal Framework (Elliot, 2005)

	Hope for Competence (Approach)	Fear of Incompetence (Avoid)
Absolute / Intrapersonal Definition of Competence	<i>Mastery-Approach Goal</i> Focus on mastering task, learning, understanding Use of standards of self- improvement, progress, deep understanding of task	<i>Mastery-Avoid Goal</i> Focus on avoiding misunderstanding, avoiding not learning or not mastering task. Use of standards of not being wrong, not doing it incorrectly relative to task
Interpersonal Definition of Competence	<i>Performance-Approach Goal</i> Focus on being superior, besting others, being the smartest, best at task in comparison to others. Use of standards such as getting best or highest grades, being top or best performer in class.	<i>Performance-Avoid Goal</i> Focus on avoiding inferiority, not looking stupid or dumb in comparison to others. Use of standards such as not getting the worst grade, being lowest performer in class.

Individuals can either define competence in absolute terms by setting their own internal standard or they can assess their competence based on an intrapersonal normative standard—on, that is, what others expect of them. Conceptually, the absolute and intrapersonal standards for value in competence are similar to mastery goals, whereas the intrapersonal normative standard is comparable to performance goals.

Although adding the fourth dimension of mastery-avoid goals would be theoretically useful, it has not been included in the present study's framework. There is a

widespread belief that “there is much research to be done before mastery-avoid goals can be accepted as valid or useful in goal theory” (Levy-Tossman, Kaplana, & Assor, 2007). For this reason, the present study uses the trichotomous framework which, again, includes the mastery, performance-approach, and performance-avoid goal orientations and has been extensively studied in the literature.

***Stability of the goal orientation construct.***

Where stability is concerned, goal-orientation constructs can contain significant inconsistencies. Goal orientation, that is, can be viewed as a stable dispositional trait that is not influenced by the situation, or it can be viewed as an unstable trait that is influenced in some manner by the situation. DeShon and Gillespie (2005) reviewed the existing studies and created three categories of stability. The first category viewed goal orientation as a stable disposition that did not vary. The second category suggested that goal orientation was a function of both the person and the situation. The final category suggested goal orientation was highly unstable and was influenced significantly by the situation. DeShon and Gillespie (2005) revealed that 46.6% of studies viewed goal orientation as a stable characteristic, 26.1% viewed goal orientation as the result of an interaction between the individual and the situation, and 4.5% viewed goal orientation as highly unstable. The present study adopts the middle approach. That is, goal orientation is influenced by both the individual and the situation. Although only 26.1% of the studies DeShon reviewed shared this view, these studies tended to be more recent than those that viewed goal orientation as a stable trait. Viewing goal orientation as a trait and

a state is also consistent with Payne, Youngcourt and Beaubien's (2007) observation that several of the researchers who have historically viewed goal orientation as a stable trait have also manipulated participants' goal orientations.

### ***Relationship of Goal Orientations and Training Effectiveness***

As discussed, models of training effectiveness suggest many individual and situational factors that influence training outcomes. Individual influences include, for example, personality, cognitive ability, and demographics. Situational influences include organizational culture, peer and supervisor support, the opportunity to use what is learned, and the like. Since training professionals are obliged to maximize effectiveness and the associated return on investment of training dollars, it is critical that they better understand the impact of individual and situational influences – such as achievement goals - on training effectiveness.

As explained in this section, many researchers have hypothesized that a mastery approach to training is more likely to result in superior training effectiveness. Researchers (Chiaburu & Marinova, 2005; DeShon & Gillespie, 2005; Payne et al., 2007; Tziner, Fisher, Senior, & Weisberg, 2007) posit further that—if training professionals determine that few individuals in a given training group have such an orientation—these professionals might consider structuring their training so as to optimize the likelihood that more individual learners will assume a mastery approach to the training. They might, for example, use role playing as a primary activity in lieu of testing for declarative knowledge. Of course, before researchers begin adopting different training goal structures

to induce mastery goal orientations, the relationship between individual goal orientations and training effectiveness in federal training programs must be tested. (Historically, such research has been conducted only in the classroom and in limited populations of adults.) By focusing on the individual goal orientations of homeless-services professionals attending HUD-funded training and the relationship of these orientations to training effectiveness, this study should provide some of that testing. The following provides a more detailed description of the influence of individual goal orientations.

***Mastery orientation.***

Individuals who have a mastery orientation are most interested in developing their competence; they tend to use internal referents: (“Have I done better?”; “Have I learned?”). Individuals having a performance-approach orientation, on the other hand, are interested in demonstrating their competence; they more often use interpersonal referents: (“Have I done better than others?”; “Do others think I am smart?”) (Payne, Youngcourt, & Beaubien, 2007; Elliot, 2005). Research has identified several positive achievement patterns associated with mastery orientations. Specifically, studies have shown that individuals having mastery goals typically engage in increased metacognitive activity, which in turn correlates positively with desirable training outcomes (Ford, Smith, Weissbein, Gully, & Salas, 1998; Schmitt & Ford, 2003; Elliot, 1997; Ames & Archer, 1988; Grant & Dweck, 2003; Wolters, 2004; Urdan, 1997). So far, these positive achievement-related outcomes are consistently found across multiple contexts.

Several studies suggest that a mastery orientation yields more positive affective responses related to self-efficacy as well (Stevens & Gist, 1997; Meece et al., 1988; Midgley et al., 1998; Wolters, 2004; Martocchio & Hertenstein, 2003). Wolters (2004) and Martocchio and Hertenstein (2003) provide specific support for the hypotheses tested in the present study. Martocchio and Hertenstein (2003) conducted an experiment involving ninety-six employees taking an Introductory Access 97 class. They identified significant relationships between dispositional learning orientation and pre-, mid-, and post-training self-efficacy; and they predicted that post-training self-efficacy (pre- and mid-training) and declarative knowledge would have a positive influence on the relationship between learning orientation and post-training self-efficacy. As in the present study, Martocchio and Herenstein (2003) conducted their study with working adults and analyzed post-training self-efficacy as a dependent variable.

The objective of Wolters' (2004) study was to assess how goal orientations and goal structure in the classroom were related to student motivation as well as declarative learning outcomes. Wolters (2004) found that, among junior high school students, mastery structure and mastery orientation were related to positive affective outcomes in all areas. Similar to most other studies of achievement goals, Wolters' work focused on students in the classroom—not on working adults. However, along with Martocchio and Herenstein's study, it was one of the most recent examples of how a mastery orientation consistently leads to positive training outcomes.

### ***Performance-approach orientation.***

A performance-approach orientation focuses on external referents; these individuals are motivated to compare themselves with others in order to demonstrate their competence (Elliot, 2005; Payne et al., 2007). The research related to performance-approach orientation has been inconsistent among a wide variety of studies. Specifically, some studies found correlations between a performance-approach orientation and such positive outcomes as positive feelings, high self-efficacy, and high grades (Elliot, 1999). Other studies, however, found associations between performance-approach goals and negative outcomes, such as surface-level learning strategies (memorizing and rehearsing), anxiety, self-handicapping behavior (procrastinating), academic cheating, quitting when confronted with failure, unwillingness to cooperate, disruptive behavior, and negative affect (Kaplan, Green, & Midgley, 2002; Kaplan & Midgley, 1997; Midgley, Kaplan, & Middleton, 2001; Elliot & Harackiewicz, 1996; Kaplan et al., 2002; Meece et al., 1988; Midgley, 1993; Ames, 1992; Dweck & Leggett, 1988; Urdan et al., 1998; Elliot & Church, 1997; Elliot & McGregor, 2001). Despite the evidence of these relationships in some studies, the results were inconsistent and provide little grounds for generalization.

### ***Performance-avoid orientation.***

A performance-avoid orientation similarly suggests that individuals having this orientation also compare themselves with others; but, instead of demonstrating their competence, they are most interested in avoiding looking incompetent to others (Elliot, 2005; Payne et al., 2007). Within the goal orientation framework suggested by Elliot, a

high performance-avoid orientation suggests that an individual in an achievement situation is motivated to avoid looking incompetent to others. Research findings consistently affirm the negative outcomes associated with performance-avoidance goals (Elliot, 1999).

**Dependent Variable: Self Efficacy**

As mentioned earlier, Bandura's (1977a, 1977b) Social Cognitive Theory suggests that individuals possess a system of beliefs about themselves, beliefs that—subject to the ongoing interaction between this system and their environment—serve to regulate cognitions and behavior and thus to influence the individual's social system. One important such belief involves an individual's sense of self-efficacy. Bandura defines self-efficacy as “people's judgments of their ability to organize and execute course of actions to attain designated types of performances” (1986, p.391). An individual's sense of self-efficacy can influence behavior in several different ways.

First, this sense helps determine the choice of tasks to be pursued. Individuals will pursue tasks about which they have a strong sense of self efficacy and will avoid other tasks in which their self efficacy is low. Second, an individual's perceived self efficacy influences both the level and the persistence of effort. Individuals with a high self efficacy can expend more effort and can persist over longer periods of time. To some extent, this process entails a self-fulfilling prophecy; the increased level of success achieved because of greater effort and persistence leads to an even higher level of self efficacy as future performance situations arise. Conversely, individuals with low self

efficacy, in expending less effort and achieving lower performance levels, can further lower their perceived self efficacy. Finally, self efficacy impacts performance by influencing an individual's emotional reactions. When asked to perform, individuals with low self efficacy in a particular area may react with anxiety and stress, thereby hindering performance. Alternatively, individuals with a high sense of self efficacy in a specific performance environment may display enhanced optimism and less anxiety (Aronson, 2002; Bandura, 1977, 1986). Of course, if the requisite abilities are lacking, high self-efficacy alone cannot guarantee superior performance. What's more, high self-efficacy can actually lead to negative consequences, including inappropriate task persistence (Lathem & Pinder, 2005).

Pajares (1996) notes that it is important that self efficacy is different from other concepts related to personal competence in that it entails an individual's perceived capabilities to reach post-training goals. For instance, self-esteem depends on a person's feeling of self-worth, whereas self efficacy involves perceived capabilities, whether these exist or not. Persons that are fearful of skydiving may have low self-efficacy related to that specific activity; but, since much of their self-esteem is not invested in that particular activity, their overall self-esteem would not be affected.

***Sources of self-efficacy.***

Self-efficacy is derived from four main sources, the first and most influential of which is a person's own experiences. Mastery experiences strengthen self-efficacy and failure reduces it, especially when a high self-efficacy has not previously been

established (Bandura, 1986). Those experiencing easy success, however, are in danger of becoming discouraged when obstacles arise. A solid sense of self-efficacy requires the exercise of perseverance in the face of adversity. Facing and overcoming challenges helps people to become more resilient in times of setbacks and thus tends to engender a more robust sense of self-efficacy (Pajares, 1996).

Vicarious experience—that is, the experience of observing the actions of others—while not as powerful as mastery experiences, can be an important source of self-efficacy. When individuals observe models that they consider comparable to themselves and see these persons succeeding, they begin to believe that they, too, might have the competence necessary to succeed, and this experience elevates their own sense of self-efficacy. Perceived similarity in model-observer relationships is important. For instance, if a model fails and the observer views his or her own competence as superior to that of the model, the observer's self-efficacy will probably not be affected. If a model with a perceived higher level of competence fails, however, the observer's level of self-efficacy would be negatively impacted (Schunk, 1981, 1983). Despite such possibilities, people who seek out and emulate competent models can enhance their own perceived self-efficacy by observing the skills and strategies these models employ when managing environmental demands (Pajares, 1996).

Although less influential than mastery and vicarious experiences, a third source contributing to an individual's perceived self-efficacy can be the social persuasions he or she encounters. As Bandura (1997) cautions, however, it is important to avoid confusing

effective encouragement or persuasions with empty praise. Effective encouragement will support the development of people's self-beliefs. Likewise, those who attempt to discourage can negatively impact perceptions of self-efficacy. It is easier, in fact, to diminish self-efficacy with discouragement than it is to enhance self-efficacy with praise (Bandura, 1986).

Finally, when assessing their own competence, people will also look upon certain of their physiological states—nausea, fatigue, and pain, for example—as well as certain emotions as signs of vulnerability. Persons having low perceived self-efficacy tend to interpret such body states and emotions as signs of incompetence, while those with higher perceived self-efficacy might consider these reactions unrepresentative and thus will not interpret them as evidence of incompetence. That is, it is people's perceptions and interpretations of their emotional or physical states that most impact self-beliefs, not the intensity of these states.

### ***Relationship of Self-Efficacy to Training Effectiveness***

As noted above, Kirkpatrick's early researches associated learning almost exclusively with declarative knowledge, the associated facts, and the like. Alliger and Janak (1989) later described a framework that further categorized learning outcomes into three "categories": immediate post-training knowledge, knowledge retention, and behavior/skill demonstration during the training. Kraiger, Ford, and Salas (1993), who saw learning as a far more complex and multidimensional experience, posited three types of learning outcomes: cognitive-based, skill-based, and affective. Of primary interest for

the present study are the attitudinal and motivational affective outcomes—including, in particular, post-training self-efficacy.

Numerous studies have reported positive relationships between post-training self-efficacy and such training outcomes as cognitive learning, training performance, and transfer performance: cognitive learning (Martocchio, 1994; Martocchio & Dulebohn, 1994; Martocchio & Judge, 1997); training performance (Martocchio & Dulebohn, 1994; Mathieu, Martineau, & Tannenbaum, 1993); transfer performance (Ford, Smith, Weissbein, Gully, & Salas, 1998; Warr, Allan, & Birdi, 1999). That being the case, changes in a trainee's sense of self-efficacy may well be a useful indicator of learning and overall training effectiveness.

The research of Ford, Smith, Weissbein, Gully, & Salas (1998) is an example of research supports the positive linkage between self-efficacy and transfer performance. In their study, 93 undergraduate students practiced with a PC-based decision making program – TANDEM - that simulates a naval radar tracking task. Participants learned how to deal with ambiguous and often conflicting target information. After the practice sessions were complete, the participants were asked to complete a twelve minute scenario that was more difficult than anything experienced in practice. The participants were also not allowed to use any practice aids (manuals, etc.). The researchers hypothesized that knowledge, skills, and self-efficacy were positively related to transfer performance (e.g. results of the twelve minute scenario). At the conclusion of the research, the three

learning outcomes were all found to be significant factors predicting transfer performance.

### **Research Questions**

Based on the review of the literature, the following research questions were considered the present study.

1. How does a mastery orientation influence changes in post-training self-efficacy among homeless-services professionals that attend financial management training?
2. How does a performance-approach orientation influence changes in post-training self-efficacy among homeless-services professionals that attend financial management training?
3. How does a performance-avoid orientation influence changes in post-training self-efficacy among homeless-services professionals that attend financial management training?
4. What is the predictive power of a mastery goal orientation on changes in post-training self-efficacy?
5. What is the predictive power of a performance-approach goal orientation on changes in post-training self-efficacy?
6. What is the predictive power of a performance-avoid goal orientation on changes in post-training self-efficacy?

7. What is the predictive power of a model featuring all three—mastery, performance-approach, and performance-avoid—goal orientations on changes in post-training self-efficacy?

Training research has clearly expanded in the last two decades, and multiple models of training effectiveness are now available to guide practitioners and researchers. This chapter highlighted the social-cognitive approach that plays a prominent role in these models. Of particular importance is the concept of self-efficacy – a direct descendant of social-cognitive theory. As noted in this chapter, the emergence of achievement motivation and achievement goal theory further supported the development of models of training effectiveness. This chapter concluded with several research questions that are derived from research and were explored in the present study. The following chapter details the methods used to explore the research questions and test specific hypotheses.

## **Chapter Three**

### **Methods**

#### **Introduction**

The purpose of the study is to better understand how the goal orientations of homeless service organization employees attending HUD-funded training affects changes in post-training self-efficacy—an indicator of training effectiveness. Three categories of goal orientation—mastery, performance-approach, and performance-avoid—serve as independent variables, while changes in post-training self-efficacy serves as the dependent variable. This chapter details the research design, population and sample, instrumentation, data collection, and data analysis used in the present study.

#### **Research Design**

Because a convenience sample is being used and it is therefore not possible to assign training participants to groups randomly, a quasi-experimental design—specifically, a Two-Group Pretest-Posttest Design Using an Untreated Control Group design (Garson, 2008)—was used. Convenience samples are widely used where random sampling is too costly or where they are the only practical approach (Garson, 2008; Tabachnick & Fidell 2001). It is important to note that this study is unique in that a control group – while preferred – is not often used in social science research.

The study uses similar groups for its treatment and control groups and features a pre-test and post-test with both. This research design is illustrated graphically below.

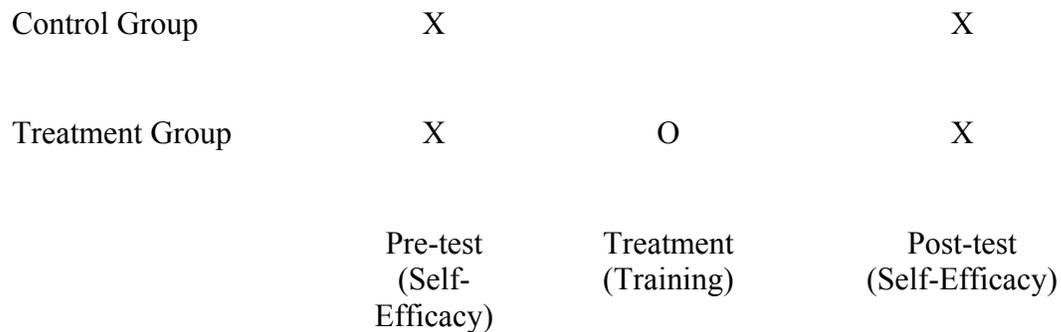


Figure 7 Research Design for the Present Study

### Population and Sample

The unit of analysis for this study was the paid employee of an organization that assists persons who are homeless or at risk of becoming homeless. The organization must also have received funding—directly or indirectly—from the U.S. Department of Housing and Urban Development (HUD) and must be presently administering federal homeless assistance. In 2008, three hundred and sixty three state and local governments received approximately \$160 million in funding from the Emergency Shelter Program, and approximately 6,300 projects were awarded approximately \$1.6 billion in funding through HUD’s competitive homeless programs; the projects are sponsored primarily by nonprofit service organizations (HUD 2009a). The thousands of employees working for these local government and nonprofit organizations were the targeted population for the present study.

The treatment group for the present study included the paid homeless-services employees that attended one of six deliveries of a two-day financial management training for homeless program grantees that was delivered in February through July of 2009. Training locations were throughout the southeastern United States. The workshop was of a technical nature and emphasized the federal law, regulations, and requirements related to administering HUD homeless programs. The training employed several delivery techniques, including lecture, groups discussion, and small group activities. Selected topics included HUD's three national homeless objectives, eligible activities and programmatic areas, definitions and documentation of homelessness and disability, and financial and programmatic systems and processes. The training was not mandatory.

Individuals in the treatment group were self-selected and were granted a course confirmation on a first-come first-served basis, up to the maximum of fifty participants per training delivery. Individuals invited to the trainings (that is, the sampling frame) included those that were employed by homeless service providers and whose email addresses were in a proprietary contact database owned by the researcher. Two hundred and seventy-two individuals elected to attend one of the training deliveries. One hundred and seventeen of these individuals participated fully in the research study; that is, they completed both pre and post surveys. The control group consisted of homeless service professionals—who were also self-selected and whose demographics were similar to those of the treatment group—that did not attend the training. Individuals were invited to complete two brief online surveys that were nearly identical to the survey instruments

used in the treatment group. Interested individuals completed the survey using SurveyMonkey—an online survey platform. Five hundred and fifty individuals were invited via email to participate in the project. The database consulted for the invitations included a proprietary national database of homeless service providers who are eligible to attend HUD-sponsored homeless trainings. This database was supplemented by the membership database of the National Coalition to End Homelessness. Sixty-one individuals of these individuals elected to participate fully in the project and completed both parts of the survey; this group was considered the control group.

### **Description of Instrument and Measures**

This section provides detailed information about the instruments and associated measures used in the present study. In order to assess the validity and reliability of the proposed scales, several steps were taken. Specifically, previous psychometric evaluations were reviewed, content validity was confirmed by expert reviewers, and construct validity and internal reliability for the study's population was established using factor analysis and Cronbach's alpha. The goal orientation scales are described separately in the following discussion.

#### **Reliability and validity of the achievement goal orientation scales.**

The present study utilizes a trichotomous achievement goal framework that includes a mastery goal, focused on the development of competence; a performance-approach goal, focused on the attainment of normative competence; and a performance-

avoid goal, focused on the avoidance of normative incompetence. The Achievement Goal Orientation Questionnaire – Revised (Elliot and Murayama, 2008) has been used in the present study to measure these constructs. Table 2 provides an overview of the achievement goal scales to be used.

Table 2. Description of Measures

Variable	Definition	Scoring	Sample Item	Internal Consistency
Mastery Orientation	Focus on mastering task, learning, understanding. Use of standards of self-improvement, progress, deep understanding of task (Elliot and McGregor 2001)	Three items with a scale of 1 (strongly disagree) to 5 (strongly agree).	My aim is to completely master the material presented in this class.	Cronbach's $\alpha = .84$ (Elliot and Murayama, 2008)
Performance-Approach Orientation	Focus on being superior, besting others, being the smartest, best at task in comparison to others. Use of standards such as getting best or highest grades, being top or best performer in class. (Elliot and McGregor 2001)	Three items with a scale of 1 (strongly disagree) to 5 (strongly agree).	My goal is to perform better than the other students.	Cronbach's $\alpha = .92$ (Elliot and Murayama, 2008)
Performance-Avoid Orientation	Focus on avoiding inferiority, not looking stupid in comparison to others. Use of standards of not getting the worst grade, being lowest performer in class. (Elliot and McGregor 2001)	Three items with a scale of 1 (strongly disagree) to 5 (strongly agree).	I am striving to avoid performing less well than others.	Cronbach's $\alpha = .94$ (Elliot and Murayama, 2008)

Elliot and Murayama (2008) recently revised the Achievement Goal Orientation Questionnaire originally developed by Elliot and McGregor (2001). Elliot and Murayama (2008) tested the reliability and validity of the new instrument with 229 undergraduates (seventy-six male, 150 female, and three unspecified) enrolled in an introductory-level psychology course at a northeastern university. Most of these students, who received extra course credit for participating in the study, were sophomores or juniors whose average age was 19.41 years. Participants were African American (3.92%), Asian (16.16%), Caucasian (68.56%), and Hispanic (4.8%). The remainder was unspecified.

In Elliot and Murayama's study, the focus of the measure was on the students' achievement goals for the first exam in their introductory-level psychology course. Participants responded on a scale of 1 (strongly disagree) to 5 (strongly agree). Item averages were used to develop the mastery, performance-approach, and performance-avoid indices.

Elliot and Murayama (2008) used confirmatory factor analyses (CFAs) to assess the validity of the achievement goal items. Chi-square degree of freedom ratio ( $\chi^2/df$ ), comparative fit index (CFI), incremental fit index (IFI), and root-mean-square error of approximation (RMSEA) were all used to assess the fit of the model to the data. The following criteria were used to evaluate the adequacy of model fit:  $\chi^2/df \leq 2.0$  and  $CFI \geq .90$ ,  $IFI \geq .90$ , and  $RMSEA \leq .08$  (Browne & Cudeck, 1989). The results from this analysis strongly supported the hypothesized model. All factor loadings were high

(ranging from .93 to .73) and each fit statistic met the criteria for a good fitting model:  $\chi^2(48, N = 229) = 78.32, p < .01, \chi^2/df = 1.63; CFI = .99, IFI = .99, RMSEA = .053$ . Additionally, all of the scales demonstrated high levels of internal consistency (Cronbach's  $\alpha > .70$ ): for mastery-approach goals, performance-approach goals, and performance-avoidance goals, Cronbach's  $\alpha = .84, .92, \text{ and } .94$ , respectively.

The content validity of the items measuring the independent variables is also an important consideration. The literature review features several existing scales that measure goal orientations among individual college students and, to a lesser extent, working adults; athletes have been a significant population of study. Researchers (Elliot & McGregor, 2001; Elliot & Murayama, 2008) specializing in the study of goal orientations seem to agree—at least for the populations studied—that the scale items to be used in the proposed study do in fact measure the concepts in question. The literature also indicates that the proposed scales are comprehensive and that their inclusion in the survey instrument would ensure content validity.

#### **Reliability and validity of the self-efficacy scale.**

Assessment of post-training self-efficacy was based on responses to seventeen items that asked participants to rate their degrees of confidence by marking one of eleven equidistant numbers (0, 10, 20, etc.) between 0 and 100 on a scale provided on the proposed questionnaire. (See questions 1-17 of the questionnaire in Attachment A.) Each item was designed specifically for the financial management workshop. This highly

customized portion of the questionnaire is consistent with Bandura's (2006) suggestions regarding the measurement of self-efficacy. As he points out:

There is no all-purpose measure of perceived self-efficacy. The "one measure fits all" approach usually has limited explanatory and predictive value because most of the items in an all-purpose test may have little or no relevance to the domain of functioning. . . . Scales of perceived self-efficacy must be tailored to the particular domain of functioning that is the object of interest. (p. 307)

The data provided for each of the survey items' eleven intervals were averaged and used to measure the self-efficacy variable. Because the reliability and validity of the proposed items has not been established, they were included in a pilot survey; and construct and content validity were established as outlined in subsequent sections of this chapter.

### **Control variables.**

Control variables are most often used to rule out alternative explanations for research findings (Garson, 2008). Among the control variables included in the present study were three that impact the transfer of training to the workplace. These included the opportunity to use learning, supervisory support, and the motivation to transfer. Additionally, several demographics were used as control variables; age, organization type, organizational role, years in present position, and education level was used as

control variables. Most of these control variables are self explanatory. The transfer-system-related variables, however, require more explanation.

The Learning Transfer System Inventory (LTSI) features sixteen scales that include a comprehensive set of constructs affecting the transfer of training. The LTSI not only includes transfer-climate factors—supervisory support or sanctions, for example—but also includes other influences on transfer such as training design, personal characteristics and motivational influences (Holton, Bates,& Ruona, 2000). As part of their effort to establish reliability and validity, Holton, Bates and Ruona (2000) sampled 1,616 adult training participants. The sample was heterogeneous; participants represented a wide range of organizations and trainings. Organization types included government (41.8%), for-profit (26.7%), and non-profit (11.9%). The remaining individuals attended a publicly offered training and were primarily from the for-profit sector. The primary type of training covered technical skills (33.7%) or sales/customer service (26.9%) (Holton, Bates,& Ruona, 2000).

Exploratory factors analysis was used and resulted in a sixteen-factor structure. The average loading on the major factor was .62 and Cronbach alpha reliabilities ranged from .63 to .91, with only three of the scales below .70. In the final analysis, sixty-eight items were kept in the LTSI (Holton, Bates,& Ruona, 2000). Of the sixteen available scales, three scales were used as control variables in the present study. These scales include the opportunity to use learning, supervisory support, and the motivation to transfer from the LTSI. Table 3 provides an overview of the LTSI scales to be used.

Table 3. Transfer System Scales

Variable	Definition	Scoring	Sample Item	Internal Consistency
Motivation to Transfer	The direction, intensity, and persistence of effort toward utilizing in a work settings skills and knowledge learned	Three items with a scale of 1 (strongly disagree) to 5 (strongly agree).	When I leave training, I can't wait to get back to work to try what I have learned.	Cronbach's $\alpha$ = .83 (Holton, Bates,& Ruona, 2000)
Supervisory Support	The extent to which supervisors support and reinforce use of training on the job	Three items with a scale of 1 (strongly disagree) to 5 (strongly agree).	My supervisor sets goals for me that encourage me to apply my training on the job	Cronbach's $\alpha$ = .91 (Holton, Bates,& Ruona, 2000)
Opportunity to Use Learning	The extent to which trainees are provided with or obtain resources and tasks on the job, enabling them to use training on the job	Three items with a scale of 1 (strongly disagree) to 5 (strongly agree).	My workload allows me to try the new things I have learned	Cronbach's $\alpha$ = .70 (Holton, Bates,& Ruona, 2000)

### Data-Collection Procedures

The survey recruitment strategy differed between the treatment group and the control group. The treatment group completed the survey onsite during a training, while

the control group did not attend a training and completed the survey online. This section details the pilot testing of the survey as well as survey administration.

**Pilot testing.**

The survey design included a two-part survey that was administered in person or online, depending on whether the participant was in the treatment or control group (Table 4).

Table 4. Instrumentation for the Present Study

<p>Part I of the Survey</p> <p>Treatment Group – pen and paper questionnaire completed after registrants signed in, but prior to the start of the training.</p> <p>Control Group - online survey completed over a two-week period after an initial email invitation was delivered.</p>	<p>Scales included</p> <p>Mastery goal orientation (3 items)</p> <p>Performance-approach orientation (3 items)</p> <p>Performance-avoid orientation (3 items)</p> <p>Training-specific self-efficacy (11 items)</p> <p>Demographic variables (5 items)</p>
<p>Part II of the Survey</p> <p>Treatment Group - pen and paper questionnaire completed near the conclusion of the training</p> <p>Control Group - online survey completed over a two-week period after an Part I was completed.</p>	<p>Scales included</p> <p>Post-training self-efficacy (11 items)</p> <p>Motivation to transfer (3 items)</p> <p>Supervisor support (3 items)</p> <p>Opportunity to use learning (3 items)</p>

Parts I and II of the survey were piloted to ensure that they worked as planned. The seven individuals asked to complete the pilot, which was administered via the web using Survey Monkey, all had extensive experience working with and/or training homeless service organization employees. Participants were asked to respond to several supplemental questions designed to identify any areas of confusion and to elicit suggestions for improvement. They also took part in a followup conference call. The pilot participants felt the question wording was clear, the instrument was easy to complete, and the content of the survey items was valid. They had several concerns, however, regarding the items used for the post-training self-efficacy scale. After significant discussion, the majority of these items were reworded so as to better reflect the objectives of the training to be used in the present study. The approximate time needed to complete each part of the final survey instrument was ten minutes or less; it included the same number of items as the piloted survey. Appendix A includes the survey instrument used for the present study.

### **Survey administration.**

For individuals in the treatment group, training invitations were emailed three to four weeks prior to the delivery of each training. These invitations made no reference to the present study. Instead, during the registration process on the day of the training, the trainer asked attendees whether they were interested in participating in the study. In order to increase the response rate, participating individuals were eligible to win a \$25

gift certificate in a drawing held at the conclusion of the training. Prior to the start of the training, interested individuals were given Part I of the survey and asked to take their seats in the training room and complete the survey. Prior to the beginning of the training, the trainers announced that those completing the survey should pass them to the front of the room for collection. After collecting the completed surveys, the trainer proceeded to start the training. Trainers were instructed not to allow latecomers to complete the pre-training survey and to limit their answers to any participant questions to what was outlined in the survey itself. This minimized the impact of trainer comments on survey responses.

Trainers were asked to ensure that all of the items in the “program administration difficulties” section (self-efficacy scale) were covered during the training and to refrain from making changes to the training during their sessions. Because experience with similar trainings has shown that study participants are likely to leave at lunch on the last day of the training, thereby rendering the "before" and "after" samples non-comparable, Part II of the survey was administered before lunch on the last day. This procedure minimized the impact of any mortality bias.

At the conclusion of the training, a drawing was conducted among those that completed both parts of the survey and the winner was presented a \$25 gift certificate. Immediately following the training, completed surveys were shipped via overnight delivery to the researcher. To ensure that variables were measured in the same way

before and after all of the trainings, these procedures were spelled out in a survey administration protocol provided to each of the trainers who administered the survey.

The survey administration for the control group was quite different from that for the treatment group. To ensure the maximum possible participation in Part I of the survey, a four-part email message was sent out three times over a four-week period. This emailing briefly explained the purpose of the research project, asked participants to click on a web link to access and complete Part I of the survey, informed them of the possibility of winning a \$25 gift certificate, and thanked them for their time. After two weeks, the same message was sent to those that had not completed Part I of the survey. A third and final email was sent to those that had still not completed the survey. So as to keep from becoming a nuisance, the researcher made no additional mailings or contacts. One hundred and twelve (112) individuals completed Part I of the survey.

Another email message was sent—three times in a period of two weeks—to the 112 individuals that completed Part I of the survey. They were encouraged to complete Part II of the survey and were reminded of the possibility of winning a \$25 gift certificate if they completed both Parts I and II of the survey. The sixty-one (61) individuals who completed Parts I and II of the survey are considered the Control Group for the present study.

All data from the Treatment Group was entered into an Excel spreadsheet. Data from the Control Group was imported from Survey Monkey into an Excel Spreadsheet as

well. All data were subsequently transferred to PASW version 18 (formerly SPSS) for data analysis.

### **Confidentiality.**

Participants were assured that their responses would be confidential and that it would not be possible to attribute their responses to any individual. First and last names were requested from the treatment group so that Parts I and II of the survey could be matched; but, once the survey data were entered into Excel and a case number was assigned, the original survey instruments were destroyed. No identifying data were included in the electronic data set. Email addresses were requested from the Control Group for the same reason. Once the data were imported from Survey Monkey, the parts of the survey matched, and a case number assigned, the original data on the Survey Monkey website was deleted and no other record was kept that contained identifying data.

### **Data-Analysis Procedures**

Data for the present study was analyzed to determine the relationships between individual goal orientations and post-training self-efficacy. The data analysis included several statistical procedures designed to ensure that the data were complete and accurate and that they met all of the required assumptions of regression analysis. Once the data was prepared, analysis was conducted to further control for the non-random nature of the treatment and control groups. Finally, hypotheses were tested using multiple regression.

Data preparation included several analyses. The first analysis was designed to ensure sufficient statistical power. This entailed ensuring that there were enough valid cases in the treatment and control groups that Type II errors would be minimized. The second analysis included descriptive statistics for each variable; it provided measures related to central tendency—mean, median, and mode—along with measures of dispersion, such as standard deviation. The descriptive data were reviewed to ensure data accuracy and to address missing data. The third analysis employed measures of skewness and kurtosis to assess the distribution of the univariate variables. Variables were transformed as needed to ensure that they were normally distributed, linear, and homoscedastic. The fourth analysis used standardized Z scores to identify univariate outliers together with the Mahalanobis Distance statistic to identify multivariate outliers. The fifth analysis included an assessment of singularity and multicollinearity by assessing bivariate correlations using Pearson's  $r$  and tolerance, respectively. The sixth analysis ensured convergent and discriminant validity for the scales used in the study. Cronbach's alpha was used to determine internal consistency (and thus convergent validity), and a confirmatory factor analysis verified whether the scales had discriminant validity, that is, whether indicator items for a given construct load on their own factor. Finally, multivariate regression analysis was used to systematically test each of the null hypotheses proposed in this study, to determine the overall R square of the model, and to determine the extent to which each independent variable significantly contributes to the overall predictive power of the model.

## **Chapter Four**

### **Results**

#### **Introduction**

The results of the present study are based on measuring individual goal orientation and changes in post-training self-efficacy as well as several other demographic- and transfer-system-related control variables. This chapter analyzes these variables and is organized as 1) data preparation, 2) factor analysis, and 3) regression.

#### **Data Preparation**

Prior to analysis, self-efficacy (PRESE, POSTSE), mastery goal orientation (GOM), performance-approach goal orientation (GOP), performance-avoid goal orientation (GOA), opportunity to use learning (OU), supervisory support (SS), motivation to transfer (MO), age (AGE), years employed (YRSEMPLOY), organization type (ORGTTYPE), job type (JOBTYPE), education level (EDUC), and pre-existing knowledge (PREKNLDGE) were examined, using various statistical techniques, for accuracy of data entry, missing values, and alignment between their distributions and the assumptions of multivariate analysis (Tabachnick & Fidell 2001). Each variable value was based on data provided by a specific question on the survey instruments (Appendix A). The variable coding is described in Table 5.

Table 5. Variable Coding

Variable	Part I Survey Questions	Part II Survey Questions
Change in Self-efficacy		
SE1	1	1
SE2	2	2
SE3	3	3
SE4	4	4
SE5	5	5
SE6	6	6
SE7	7	7
SE8	8	8
SE9	9	9
SE10	10	10
SE11	11	11
Goal Orientation Items		
GOM1	12	
GOM2	15	
GOM3	18	
GOP1	13	
GOP2	16	
GOP3	19	
GOA1	14	
GOA2	17	
GOA3	20	
Transfer System Items		
OU1		12
OU2		15
OU3		17
OU4		19
MO1		13
MO2		16
MO3		18
SS1		14
SS2		20
SS3		21
Demographic Items		
EDUC	23	
YRSEMP	26	
AGE	51	
PREKNLDGE	22	
JOBTYPE	25	
ORGTTYPE	24	

To ensure the accuracy of the data file, the original data were compared to the computerized file. Specifically, ten percent of the cases were randomly selected and the original data were compared to the computerized data. No data entry errors were found. Univariate descriptive statistics were also used to verify that all of the data were in range and the means and standard deviations were plausible. The computerized data file was deemed to represent the original data accurately.

Several variables contained missing values for less than five percent of the total cases. The missing values were replaced by the mean for all cases. There was, however, a more significant number of missing values on three variables: SS3 (5.1% missing); SS4 (6.2% missing), and JOBTYP (6.2% missing). Little's MCAR test was performed and resulted in a non-significant Chi-Square statistic (Chi-Square = 4.418, DF = 5, Sig. = .491). Given that the null hypotheses of Little's MCAR test holds that the missing values are not missing at random, the analysis suggests that the missing values are missing at random. As a result, the missing values of the variables were replaced with the mean in all cases (PASW 2009).

Fifteen z scores were identified outside of +/- 3.0 among the scales dependent, independent, and control variables. If left unattended, these univariate outliers would distort statistical analysis. Deletion of these cases was considered. Given the small sample size, however, it was important to preserve all cases. Instead of deleting the cases, the univariate outliers were replaced with values just inside the +/- 3.0 z score range (Garson, 2008).

Normality of the variable distributions was assessed by examining the skewness and kurtosis of each distribution. A common rule-of-thumb test for normality calls for skewness and kurtosis being within the +2 to -2 range (Garson 2008). Five variables were outside the acceptable range and were identified as non-normal (Table 6). Given that all but one of the non-normal variables were within the eleven-item self-efficacy scale and that transforming the variables would complicate interpretation, the variables - SE2, SE4, SE6, SE10 - were eliminated from the data (Garson 2008, Tabachnick and Fidell 2001).

ORGTTYPE was the single non-normal variable remaining. Although organizational type had a value range of 1 through 5, an overwhelming 84.3% of the values were equal to 4 (nonprofit organization). Given that many researchers will use dichotomies for procedures requiring a normal distribution as long as the split is less than 90:10 (Garson, 2008, Tabachnick and Fidell 2001), the variable was converted to a dichotomy. Nonprofit organizations were identified with a value of one, while all other organizations were identified with a value of two.

To assess linearity, an ANOVA test of linearity was conducted for each variable as well as the dependent variable scale item SE5 (this variable had the greatest skewness and kurtosis within acceptable ranges of all post self-efficacy scale items). If the F significance value for the nonlinear component was below .05, a significant nonlinearity was noted. Two variables were identified as having a significant nonlinear component (JOBTYPE and PREKNLDGE). Multiple transformations (square root, log, inverse, and

reflected) were used without success in an attempt to achieve linearity. As a result, both variables were dichotomized using the median point. With regard to JOBTYPE, values of one and two—which represented Executive Management and Program Management, respectively—were coded as one. The remaining values were coded as two.

PREKNLDGE was similarly dichotomized, with one representing the lowest level of pre-knowledge and two representing a higher level. The dichotomizing of continuous variables is controversial but is often used in the social sciences (Garson, 2008, Tabachnick and Fidell 2001).

Mahalanobis distance, a common measure for multivariate outliers, was used for the present study. Cases 167 and 102 were noted in excess of the maximum Chi Square of 56.62 ( $p < .001$ , 25 df) and were eliminated from the dataset.

Table 6. Variable Distribution

Variable	Skewness	Kurtosis
SE1	.547	-.454
SE2	1.461	<b>3.117</b>
SE3	1.262	1.303
SE4	1.178	<b>2.265</b>
SE5	.862	1.418
SE6	1.279	<b>2.672</b>
SE7	.707	.916
SE8	.863	1.234
SE9	.662	.838
SE10	1.439	<b>2.103</b>
SE11	.997	.707
GOM1	-.461	-.639
GOM2	-1.093	-.111
GOM3	-1.597	.557
GOP1	-.927	.047
GOP2	-.572	-.813
GOP3	-.244	-1.073
GOA1	-.251	-1.354
GOA2	-.241	-1.306
GOA3	-.319	-1.261
OU1	-.904	.321
OU2	-.630	-.296
OU3	-.446	-.496
OU4	-.263	-.980
MO1	-.469	-.663
MO2	-.091	-.461
MO3	-.258	-.799
SS1	-.703	-.076
SS2	-.444	-.494
SS3	-.427	-.499
EDUC	-.845	-.002
YRSEMP	1.312	1.465
AGE	-.273	-.651
PREKNLDGE	.214	-1.002
JOBTYPE	1.223	.569
ORGTYPE	<b>-3.255</b>	<b>12.196</b>

One hundred and seventeen individuals participated fully in the research study; that is, they completed both pre and post surveys. These individuals were considered the treatment group. The mean age of the 117 research participants in the treatment group was nearly forty-five years and the mean number of years working for their present

employer was 6.29. Approximately 77% had earned a minimum of a bachelor's degree; 89.7% were employed by a nonprofit organization; and 56.6% occupied executive/program management positions.

Sixty-one individuals elected to participate fully in the project and completed both parts of the survey without attending a training. These sixty-one research participants in the control group had a mean age of nearly forty-six years and a mean number of years working for their present employer of 6.93. Approximately 80.3% had earned a minimum of a bachelor's degree; 73.8% were employed by a nonprofit organization; and 68.9% occupied executive/program management positions.

Detailed descriptive statistics are provided in Appendices B and C for the treatment and control groups respectively. An independent samples T-test revealed that there were no significant differences in age, years employed and education between the treatment and control groups ( $p < .05$ ).

### **Factor Analysis**

The 178 cases were used to conduct a confirmatory factor analysis. Although over 300 cases would have provided more statistical power, studies with sample size similar to the present study are regularly used in the social sciences and provide adequate power (Garson, n.d.).

The analysis demonstrated that scale items load on the same factor. Principal components analysis with a varimax rotation was used to assess the initial factorability of the remaining twenty-six scale items. Six factors had eigenvalues in excess of one and

accounted for 67.04% of the variance. The communalities were also moderate to strong, with a range of .449 to .870, further confirming that each item shared some common variance with other items.

The rotated components matrix identified the loadings for each of the items in each factor. The goal is a "simple factor structure," with all main loadings greater than .70 and no cross-loadings greater than .40 (Garson, 2008). In the twenty-seven-item, six-factor model, many main loadings were in excess of .7 and cross-loadings existed in several instances. The performance-approach (GOP) and performance-avoid (GOA) scale items all loaded on factor one, with high loading factors ranging from .728 to .922. Although it was expected that the approach and avoid scales would load on separate factors, it is not surprising that all items loaded on a single factor. Although in many cases the literature confirms the separability of the performance-approach and performance-avoid constructs, other studies are less clear. All of the self-efficacy (SE) items loaded on factor two with moderate to high loadings ranging from .653 to .795. All of the opportunity to use (OU) items loaded strongly on factor three, with loadings ranging from .777 to .854. Mastery goal orientation (GOM) loaded on factor four with loadings ranging from .685 to .852. However, all motivation-to-transfer (MO) items cross-loaded on factor four as well. Three supervisor support (SS) items loaded strongly (.714 to .909) on factor five. Finally, a single opportunity to use (OU) item loaded on factor six.

As a result of cross-loading, four items were removed (MO1, MO2, MO3, and OU4); and another principal component analysis with a varimax rotation was conducted using the remaining twenty-two items. Although GOM1 did not quite reach the optimal loading of .7, the item was retained so that the scale would have three items. Scales with fewer than three items often become unstable and reliability is threatened (Garson, 2008). Likewise, SE1 and SE11—which had loadings of .653 and .687—were retained in order to improve the internal consistency of the scale. The resulting five-factor, twenty-two-item model, which yielded no cross-loadings, was adopted for the present study. The communalities in the adopted model had a range of .469 to .876 (Table 7). Additionally, five factors had eigenvalues in excess of one and accounted for 68.168% of the variance (Table 8). The main loadings of the twenty items were strong and no cross-loadings existed (Table 9).

Table 7. Communalities

Variables	Initial	Extraction
SE1	1.000	.479
SE3	1.000	.618
SE5	1.000	.452
SE7	1.000	.535
SE8	1.000	.512
SE9	1.000	.635
SE11	1.000	.469
GOM1	1.000	.554
GOM2	1.000	.784
GOM3	1.000	.723
GOP1	1.000	.562
GOP2	1.000	.774
GOP3	1.000	.737
GOA1	1.000	.834
GOA2	1.000	.869
GOA3	1.000	.876
OU1	1.000	.745
OU2	1.000	.815
OU3	1.000	.665
SS1	1.000	.626
SS2	1.000	.859
SS3	1.000	.873
Extraction Method: Principal Component Analysis		

Table 8. Initial Eigenvalues

	Total	% of Variance	Cumulative %
1	5.047	22.941	22.941
2	3.576	16.253	39.194
3	2.984	13.563	52.756
4	2.039	9.269	62.025
5	1.351	6.143	68.168
6	.847	3.849	72.016
7	.727	3.306	75.322
8	.705	3.202	78.525
9	.646	2.936	81.461
10	.604	2.747	84.208
11	.532	2.417	86.625
12	.476	2.166	88.791
13	.434	1.974	90.765
14	.397	1.803	92.568
15	.385	1.751	94.318
16	.307	1.398	95.716
17	.298	1.353	97.069
18	.244	1.107	98.176
19	.150	.681	98.858
20	.111	.505	99.362
21	.079	.361	99.723
22	.061	.277	100.000

Table 9. Rotated Component Matrix

	1	2	3	4	5
SE1	.147	<b>.652</b>	-.061	.127	-.113
SE3	.058	<b>.781</b>	.069	-.010	-.021
SE5	-.028	<b>.634</b>	.177	-.126	.053
SE7	-.047	<b>.721</b>	.012	.042	.101
SE8	.021	<b>.708</b>	-.085	-.014	.050
SE9	.012	<b>.793</b>	-.023	-.056	-.054
SE11	-.073	<b>.670</b>	.013	.104	-.060
GOM1	.128	-.139	.025	.166	<b>.700</b>
GOM2	-.012	.046	.007	.049	<b>.883</b>
GOM3	.025	.060	.043	-.042	<b>.845</b>
GOP1	<b>.727</b>	.033	-.069	.053	.159
GOP2	<b>.869</b>	-.066	.040	.084	.079
GOP3	<b>.855</b>	.023	.005	.053	.046
GOA1	<b>.902</b>	.036	.135	.025	-.013
GOA2	<b>.924</b>	.020	.117	.042	-.018
GOA3	<b>.922</b>	.028	.132	.027	-.082
OU1	.047	.087	.239	<b>.811</b>	.145
OU2	.070	-.033	.202	<b>.876</b>	.024
OU3	.092	.015	.136	<b>.798</b>	.018
SS1	.067	.000	<b>.725</b>	.280	.132
SS2	.092	.022	<b>.909</b>	.151	-.017
SS3	.110	.045	<b>.909</b>	.180	-.025

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

With one exception, the proposed factor labels suited the extracted factors and were retained. The performance-approach and performance-avoid scales were consolidated into a single performance goal orientation scale. Internal consistency for each of the scales was examined using Cronbach's alpha (Table 10). The accepted cut-off for alpha is .70 or higher for a set of items to be considered a scale (Garson, 2008). The alphas were all in excess of .70.

Table 10. Internal Consistency for the Five Scale Factors (N=172)

	No. of items	Alpha
Self-efficacy	6	.829
Mastery Goal Orientation	3	.727
Performance Goal Orientation	6	.938
Supervisor Support	3	.863
Opportunity to Use	3	.828

Composite scores were created for each of the five factors, based on the mean of the items that had their primary loadings on each factor. Descriptive statistics are presented in Table 11. The skewness and kurtosis were well within a tolerable range for assuming a normal distribution.

Table 11. Descriptive Statistics of Five Factors

	Mean	SD	Skewness		Kurtosis	
			Statistic	Std. Error	Statistic	Std. Error
FINALSE	15.7633	20.20905	1.044	.185	.668	.368
FINALGOM	4.6279	.40759	-.863	.185	-.276	.368
FINALGOP	3.3694	1.16053	-.342	.185	-.941	.368
FINALOU	3.8015	.79529	-.590	.185	-.119	.368
FINALSS	3.5046	.95932	-.608	.185	-.125	.368

Overall, these analyses indicated that five distinct factors were underlying the survey items used in the present study and that these factors were strongly internally

consistent. Eight items were eliminated, the motivation to transfer learning scale was eliminated, and the two performance orientation scales were consolidated.

To ensure that multicollinearity does not exist in the data, bivariate correlations (Table 12) were reviewed for high levels of intercorrelation among the independents. No intercorrelations above .80 were noted among the independents. However, the correlation between PREKNLDGE and FINALPRESE was .542. Due to the somewhat high correlation and to the similarity of the concepts, PREKNLDGE was eliminated. Additionally, PREKNLDGE was a dichotomous variable and offered less data richness than the continuous FINALSE variable. Multivariate correlations were also reviewed using the tolerance (Table 12). If the tolerance value is less than .20, the independent should be dropped from the analysis due to multicollinearity (Garson, 2008). Since no tolerance was less than the .20 cutoff point, multicollinearity is not a problem in the data.

Table 12. Correlations

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	1	2	3	4	5	6	7	8	9	10	11
1. EDUC	1										
2. YRSEMP	.129	1									
3. AGE	-.028	.333	1								
4. ORGTYPE	.089	.069	.028	1							
5. JOBTYP	-.246	-.304	-.164	.017	1						
6. PREKNLDGE	.158	.183	.160	.041	-.221	1					
7. FINALPRESE	.101	.191	.089	.005	-.241	.542	1				
8. FINALOU	-.118	.002	-.082	-.120	-.008	.117	.103	1			
9. FINALSS	-.112	-.109	-.144	-.096	-.029	.166	.124	.430	1		
10. FINALGOM	-.003	-.131	-.154	-.011	.053	.119	.154	.156	.085	1	
11. FINALGOP	-.062	-.123	-.267	-.112	-.025	.120	.091	.153	.184	.095	1

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Table 13. Tolerance

YRSEMP	.778
AGE	.794
ORGTTYPE	.936
JOBTYPE	.793
EDUC	.885
FINALOU	.762
FINALSS	.714
FINALPRESE	.756
FINALGOM	.910
FINALGOP	.863

The study variables considered thus far were examined using various statistical techniques for accuracy and alignment between their distributions and multivariate analysis assumptions (Tabachnick & Fidell 2001). Modifications were made as appropriate; thus the data are now well suited for parametric statistical analyses. The following section examines the relationship between the independent and dependent variables.

## **Hypotheses**

In support of the research questions proposed, several hypotheses were tested including:

Hypothesis 1: A mastery orientation is positively related to a participant's change in post-training self-efficacy.

Hypothesis 2: A performance-approach orientation is unrelated to a participant's change in post-training self-efficacy.

. Hypothesis 3: A performance-avoid orientation is negatively related to a participant's change in post-training self-efficacy.

Hypothesis 4: Mastery goal orientation explains a significant portion of the variance in the change of post-training self-efficacy.

Hypothesis 5: Performance-approach goal orientation does not explain a significant portion of the variance in the change of post-training self-efficacy.

Hypothesis 6: Performance-avoid goal orientation explains a significant portion of the variance in the change of post-training self-efficacy.

Hypotheses 7: A model containing mastery orientation, performance-approach orientation, and performance-avoid goal orientation explains a significant portion of the variance in the change of post-training self-efficacy.

## **Regression**

Hierarchical regression was used to assess the influence of the various independent variables on the dependent variable – change in post-training self-efficacy.

Variables were entered in five steps: 1) demographic variables (EDUC, YRSEMPLOY, AGE, ORGTYPE, JOBTYP); 2) transfer-system variables (FINALOU, FINALSS); 3) membership in the control or treatment group (GROUP); 4) FINALPRESE and 5) goal orientation variables (FINALGOM, FINALGOP). Table 14 displays the selected descriptive statistics of the variables entered into the model. Table 15 suggests that the demographic and transfer-system variables contribute little to the strength of the model, with an R square of .068 after step-two variables are entered into the model. The GROUP variable entered in step three modestly increased the explanatory value of the model to a total R squared of .25. The addition of FINALPRESE in step four contributed the most explanatory value, with a total R square of .737 – an increase of .587 in R square from step three. FINALPRESE explains a large percentage of the variation in the dependent variable; an individual's belief in their ability to complete a task prior to trying the task is clearly important. The addition of the goal orientation variables to the model in the final step added little to the overall predictive value of the model. The overall R square for the model was .744, suggesting that the model explains 74.4% of the variance of the dependent variable. A closer look at the regression coefficients (Table 16) reveals that group membership (GROUP) and pre-training self-efficacy (FINALPRESE) are the only variables with a significant relationship to the dependent variable. The remaining independent variables (FINALGOM, FINALGOP, FINALSS, FINALOU, AGE, EDUC, YRSEMP, ORGTYPE, JOBTYP) were not significant and added little or no value to

the model. The final adopted model—which included only FINALPRESE and GROUP—yielded a total R square of .724.

Table 14. Descriptive Statistics of Model Variables

	Mean	Std. Deviation
FINALSE	15.7633	20.20905
GROUP	1.34	.476
EDUC	3.071	.9150
YRSEMP	6.289	5.1575
AGE	45.314	10.6719
ORGTTYPE	1.1570	.36484
JOBTYPE	1.4244	.49570
FINALPRESE	63.532	27.442
FINALOU	3.8015	.79529
FINALSS	3.5046	.95932
FINALGOM	4.6279	.40759
FINALGOP	3.3694	1.16053

Table 15. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.258 <sup>a</sup>	.066	.038	19.81753
2	.260 <sup>b</sup>	.068	.028	19.92402
3	.500 <sup>c</sup>	.250	.213	17.92747
4	.858 <sup>d</sup>	.737	.722	10.65718
5	.862 <sup>e</sup>	.744	.726	10.57774

a. Predictors: (Constant), EDUC, AGE, ORGTYPE, JOBTYP, YRSEMP

b. Predictors: (Constant), EDUC, AGE, ORGTYPE, JOBTYP, YRSEMP, FINALOU, FINALSS

c. Predictors: (Constant), EDUC, AGE, ORGTYPE, JOBTYP, YRSEMP, FINALOU, FINALSS, Group

d. Predictors: (Constant), EDUC, AGE, ORGTYPE, JOBTYP, YRSEMP, FINALOU, FINALSS, Group, FINALPRESE

e. Predictors: (Constant), EDUC, AGE, ORGTYPE, JOBTYP, YRSEMP, FINALOU, FINALSS, Group, FINALPRESE, FINALGOM, FINALGOP

Table 16. Regression Coefficients

		Unstandardized		Beta	Standardized	
		B	Std. Error		t	Sig.
1	(Constant)	17.697	11.666		1.517	.131
	YRSEMP	-.191	.325	-.049	-.586	.559
	AGE	-.169	.152	-.089	-1.115	.266
	ORGTYPE	-1.570	4.186	-.028	-.375	.708
	JOBTYPE	7.768	3.308	.191	2.348	.020
	EDUC	-.755	1.727	-.034	-.437	.663
2	(Constant)	12.638	15.781		.801	.424
	YRSEMP	-.189	.329	-.048	-.575	.566
	AGE	-.159	.154	-.084	-1.033	.303
	ORGTYPE	-1.344	4.236	-.024	-.317	.751
	JOBTYPE	7.893	3.342	.194	2.362	.019
	EDUC	-.632	1.755	-.029	-.360	.719
	FINALOU	.590	2.144	.023	.275	.783
3	FINALSS	.438	1.791	.021	.244	.807
	(Constant)	58.493	15.962		3.664	.000
	YRSEMP	-.232	.296	-.059	-.783	.435
	AGE	-.187	.139	-.099	-1.352	.178
	ORGTYPE	2.912	3.871	.053	.752	.453
	JOBTYPE	3.842	3.075	.094	1.249	.213
	EDUC	-1.226	1.582	-.056	-.775	.439
	FINALOU	-1.123	1.948	-.044	-.576	.565
4	FINALSS	-1.955	1.656	-.093	-1.181	.240
	GROUP	-19.908	3.165	-.469	-6.290	.000
	(Constant)	55.496	9.490		5.848	.000
	YRSEMP	.186	.178	.048	1.050	.295
	AGE	-.111	.083	-.058	-1.342	.181
	ORGTYPE	.933	2.304	.017	.405	.686
	JOBTYPE	.615	1.838	.015	.335	.738
	EDUC	.189	.944	.009	.200	.842
	FINALOU	1.104	1.165	.043	.948	.345
	FINALSS	1.420	1.004	.067	1.415	.159
5	GROUP	-8.257	1.998	-.195	-4.132	.000
	FINALPRESE	-.575	.033	-.780	-17.299	.000
	(Constant)	35.973	13.870		2.594	.010
	YRSEMP	.233	.178	.059	1.311	.192
	AGE	-.065	.085	-.035	-.768	.443
	ORGTYPE	1.050	2.292	.019	.458	.647
	JOBTYPE	.784	1.832	.019	.428	.669
	EDUC	.288	.940	.013	.306	.760
	FINALOU	.833	1.165	.033	.715	.476
	FINALSS	1.420	.998	.067	1.423	.157
	GROUP	-7.640	2.006	-.180	-3.809	.000
FINALPRESE	-.591	.034	-.802	-17.426	.000	
FINALGOM	3.000	2.081	.061	1.442	.151	
FINALGOP	1.142	.750	.066	1.522	.130	

Table 17. Final Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	64.325	2.759		23.311	.000
	Group	-9.838	1.788	-.232	-5.502	.000
	FINALPRESE	-.556	.031	-.756	-17.935	.000

## **Chapter Five**

### **Discussion, Implications, and Conclusions**

This chapter provides 1) a summary of the study 2) a discussion of findings 3) implications, and 5) conclusions.

#### **Summary of the Study**

Training effectiveness refers to the individual and situational processes that occur before, during, and after training—processes that influence the likelihood that training will be transferred to the workplace (Kraiger, Ford, & Salas, 1993). Training-effectiveness models suggest that understanding these individual and situational variables provides insight into why training did or did not achieve its intended goal. The training industry faces several problems that the present study attempts to address, at least in part. First, practitioners do not adequately assess training effectiveness (ASTD 2008) and, until quite recently, researchers have not provided them with effective models for doing so (Tannenbaum & Yukl, 1992; Salas and Cannon-Bowers, 2001; Alvarez, Salas, & Garofano, 2007). Second, little attention has been given to an important individual consideration—personal achievement goals (Colquitt, LePine, & Noe, 2000; Ford & Weissbien, 1997; Kraiger & Ford, 2007). Finally, there are no extant studies that have used models of training effectiveness to study the influence that achievement goals have on the outcomes of federally-funded trainings. Thus a number of unanswered questions remain, questions regarding, in particular, the impacts of these individual and situational variables and their implications for training effectiveness. The present study attempted to

answer some of these questions by studying individuals who were paid employees of organizations that serve the homeless and who attended a financial management training program offered by the U.S. Department of Housing and Urban Development (HUD).

Specifically, this study has explored three categories of goal orientation—mastery, performance-approach, and performance-avoid (Elliot, 2005)—as predictors of changes in post-training self-efficacy (Bandura, 1997). The results of this study reveal that several of the variables originally hypothesized to be potential influences on changes in self-efficacy were insignificant and thus were removed from the final regression model.

As indicated earlier, the present study was structured to investigate the following research questions.

1. How does a mastery orientation influence changes in post-training self-efficacy among homeless-services professionals that attend financial management training?
2. How does a performance-approach orientation influence changes in post-training self-efficacy among homeless-services professionals that attend financial management training?
3. How does a performance-avoid orientation influence changes in post-training self-efficacy among homeless-services professionals that attend financial management training?

4. What is the predictive power of a mastery goal orientation on changes in post-training self-efficacy?
5. What is the predictive power of a performance-approach goal orientation on changes in post-training self-efficacy?
6. What is the predictive power of a performance-avoid goal orientation on changes in post-training self-efficacy?
7. What is the predictive power of a model featuring all three—mastery, performance-approach, and performance-avoid—goal orientations on changes in post-training self-efficacy?

## **Discussion**

The present study analyzed seven hypothesized relationships between achievement goals (Elliot 2005) and post-training self-efficacy (Bandura 1997). The following discussions summarize the findings of these analyses for the present study and provide a description of the study results.

### **Mastery orientation and self efficacy.**

The hypothetical relationship predicted that a mastery orientation is positively related to a participant's post-training self-efficacy. A three-question survey scale (Elliot 2005) was used to measure mastery orientation. for the present study. Consistent with Bandura's (1997) guidance approach, an eleven-question post-training self-efficacy scale was developed specifically for the financial training received as a part of the present study. Mastery orientation and post-training self-efficacy scales were validated for the

study sample through factor analysis that showed strong internal consistency of the scales.

The relationship between change in post-training self-efficacy (FINALSE) and an individual's mastery orientation (FINALGOM) was first measured using Pearson's product-moment correlation ( $r$ ). The findings indicate there is no significant correlation between FINALSE and FINALGOM. Nonetheless, given the theoretical strength of the relationship in previous research, FINALGOM was included in the hypothesized regression model. The result of the regression analysis confirmed that there was not a significant relationship between an individual's mastery orientation and post-training self-efficacy ( $t$  statistic = 1.442,  $p$  = .151) in the study sample. Consequently, FINALGOM was removed from the final regression model. Given the weak results, the hypothesized positive relationship between an individual's mastery orientation and their post-training self-efficacy was rejected.

The present study's result is contrary to the existing research; a mastery orientation and an individual's self-efficacy has strong empirical support in the literature. There are two possible methodological explanations for the inconsistency between previous research and the observed results observed in of the present study. Possible explanations include: 1) the present study sample differs substantially from those used in the past, and 2) the present study's measurement of self-efficacy differed from the measurement used in previous research.

The mean age of the 172 research participants was nearly forty-five years, and the mean number of years working for their present employer was 6.29. Approximately 77% had earned a minimum of a bachelor's degree; 84.3% were employed by a nonprofit organization; and 57.6% occupied executive/program management positions. This study sample contrasts significantly with from the younger-student-oriented samples of earlier studies. Previous study samples have included undergraduate students (Coutinho & Neuman, 2008), high school students (Wolters, 2004), and elementary school students (Kaplan & Maehr 1999). In instances where working adults were evaluated (Martocchio & Hertenstein, 2003), the participants also tended to be younger than those in the present study sample. Perhaps the most important difference, however, is that the mastery goal orientation of the present study's participants was consistently high, with a mean of 4.6279 on a five-point scale and a standard deviation of .40759. The result was that the consistently high mastery orientation score did not correlate significantly with post-training changes in self-efficacy scores.

An individual's level of self-efficacy is not a static trait; individuals cannot be highly efficacious in every learning situation. Instead, individuals vary in the areas in which they grow their efficacy. Thus the "one measure fits all" approach to measuring self-efficacy has limited value; most of the items in an all-purpose scale have little or no relevance to the specific situation under consideration. Such measures are usually too general—cast, that is, in terms that are removed from the specific tasks at hand (Bandura 2006). Most existing research on self-efficacy stops short of using a post-training scale

for measuring self-efficacy. For instance, scales from the Motivated Strategies for Learning Questionnaire (Pintrich, 1993) and others (Schwarzer, 1992) are often used. A sample question might include read “I can solve most problems if I invest the necessary effort.” Occasionally, the individuals completing such scales are directed to consider a specific task at hand as they complete the survey (Coutinho & Neuman, 2008).

Alternatively, the self-efficacy scale used in the present study, which was developed especially for this study, was highly task specific. Study participants were asked, for example, to rate how certain they were that they could do specific tasks. By entering a number from 0 to 100, participants indicated how confident they were that they could perform tasks like “Determine whether a client is homeless as defined by HUD.” The self-efficacy scale used in the present study exhibited high internal consistency (Cronbach’s alpha of .829) and was deemed valid for this sample. Perhaps it could be that the highly detailed and post-training measures used in the present study measured the self-efficacy construct in a manner significantly different from that of the measures used in previous studies.

#### **Performance orientations and self efficacy.**

The second and third research questions were related to how performance-approach and performance-avoid orientations, respectively, influenced self-efficacy among individuals who were employees of organizations that serve the homeless and who were attending the training. The associated hypotheses predicted that a performance-approach orientation is unrelated to a participant’s change in self-efficacy

and a performance-avoid orientation was negatively associated with changes in self-efficacy. Two three-question survey scales (Elliot, 2005) were used to measure performance-approach orientation and performance-avoid orientation for the present study. The two scales could not be validated as separate constructs in the present study, however. Instead, both the performance-approach and the performance-avoid survey items loaded on a single construct and had a high internal consistency (Cronbach's Alpha of .938). This consolidation of the approach and avoid aspects of performance is not surprising. It has been only recently that the performance construct was divided into the approach and avoid components. Prior to this effort development, performance goal orientation was treated as a single construct, and some recent studies continue to use this approach. Ultimately, the present study also treated performance as a single construct. As a result, the researcher hypothesized that a performance orientation is unrelated to post-training self-efficacy in the present study and thus removed from consideration the a priori hypotheses that separated performance-approach and performance-avoid.

The relationship between change in self-efficacy (FINALSE) and an individual's performance orientation (FINALGOP) was measured using Pearson's product moment correlation ( $r$ ). The findings indicate that there is no significant correlation between FINALSE and FINALGOP. Nonetheless, given the theoretical strength of this relationship reported in previous research, FINALGOP was included in the original hypothesized regression model. The result of the regression analysis confirmed that there was not a significant relationship between an individual's performance orientation and

post-training self-efficacy ( $t$  statistic = 1.522,  $p=.130$ ) in the study sample. Consequently, FINALGOP was removed from the final regression model. Thus, the hypothesized relationship hypothesis that an individual's performance orientation was unrelated to their post-training self-efficacy was accepted.

In short, the relationship between performance orientation and self-efficacy is unclear; some studies find a positive relationship between performance orientation and self-efficacy them (Ford et al. 1998) and others report a negative relationship (Phillips and Gully 1997). Most studies agree that there is a negative relationship between performance avoidance and self-efficacy (Middleton & Midgley, 1997; Pajares et al. 2000). Of course, while the present study found no relationship between a performance orientation and self-efficacy. These inconsistent findings might be explained by the nature of the task studied. Simple tasks with few demands and guaranteed success usually result in a positive link between a performance orientation and self-efficacy. However, research that utilizes challenging tasks – similar to the present study - usually yield report negative relationships between performance goals and self-efficacy. People with performance goals seek to demonstrate competence or avoid demonstrations of incompetence and, therefore, tend to adjust their level of self-efficacy based on their perceptions of whether their goals can be met.

#### **Predictive power of the model.**

The remaining research questions were related to the predictive power of the three goal orientations tested—mastery, performance-approach, and performance-avoid—on

post-training self-efficacy among individuals who are employed by organizations that provide services to the homeless and who attended HUD-funded financial management training. As noted earlier in this section, the present study suggests that none of the goal orientations (independent variables) were related to change in post-training self-efficacy (dependent variable) in the sample studied. As a result, hypotheses suggesting that goal orientations had predictive power related to change in post-training self-efficacy were rejected. Included in the model, however, were several covariate (control) variables that require further explanation.

Several covariates were considered in the present study, including demographic variables (years employed with present employer, age, organization type, job type, level of education); transfer-system-related variables (opportunity opportunities to use learning and supervisory support); membership in the treatment or control group; and pre-training self-efficacy. Interval data, including years employed, age, pre-training self-efficacy, opportunity to use learning, and supervisory support was collected; and ordinal data was collected for the level of education. The organization type, job type, and group were each dichotomous variables. To ensure that the scales used for data collection were valid for the present study, the opportunity to use and supervisory support transfer-system variables were given further analysis.

Two three-question survey scales from the Learning Transfer System Inventory (Holton , 2005) were used to measure opportunity to use and supervisory support for the present study. Because factor analysis indicated strong internal consistency, both scales

were validated for the study. Cronbach's alpha was .828 and .863 for opportunity to use and supervisory support, respectively.

All of the covariates were entered into the hierarchical regression model with the independent variables. Variables were entered into the model in five steps. The five demographic variables were entered first, followed by the two transfer system variables, the group variable, and pre-training self-efficacy, in that order. Finally, the goal orientation variables were entered. Ultimately, two covariates—group and pre-training self-efficacy—were found to be significant in the final model; Group group had a *t* statistic of -5.502 ( $p < .05$ ), and pre-training self-efficacy had a *t* statistic of -17.935 ( $p < .05$ ). No other covariates were significant in the model. The final model suggests that an increase of one point in pre-training self-efficacy will produce an increase in self-efficacy (post-training) by .556 (unstandardized coefficient) and that inclusion in the treatment group will result in a self-efficacy increase of 9.938 (unstandardized coefficient). Based on standardized coefficients, group (-.232) is a less significant predictor than pre-training self-efficacy (-.756). That is, pre-training self-efficacy is the single most significant predictor of increases in self-efficacy. Nearly as significant is the individual's attendance at the training.

### **Implications**

The purpose of the present study has been to determine whether the individual goal orientations of homeless-services professionals attending a HUD-funded training significantly influenced changes in post-training self-efficacy. It was hypothesized that a

mastery orientation was positively related to changes in an individual's self-efficacy and that a performance orientation was unrelated. The study revealed, however, that individual achievement goals were not related to changes in post-training self-efficacy; only group membership and pre-training self-efficacy (covariates) were significantly related to changes in post-training self-efficacy. Several important implications of these findings and several recommendations associated with them are discussed below.

First, if a mastery orientation was had been found to be significantly and positively related to changes in post-training self-efficacy, it would have been worthwhile to explore how manipulating a training's goal structures so as to facilitate mastery goal orientations might influence post-training self-efficacy (Urdu, Midgley, & Anderman, 1998). For instance, a mastery-approach orientation can be encouraged when learning, as opposed to performance-oriented evaluation, is emphasized. Assignments that are interesting and challenging, experiencing success in accomplishing tasks, and receiving external support and encouragement are all examples of how a mastery goal orientation might be facilitated promoted in training (Kaplan, Middleton, Urdu & Midgley, 2002; Urdu, Midgley & Anderman, 1998). However, given that the present study found no relationship between personal achievement goals and change in post-training self-efficacy, follow-on research exploring how the relationship between personal goal orientations and training goal structures might impact training outcomes within similar populations should be postponed. It is recommended that the decision to further research

into the interaction of goal orientations and structures within similar populations be delayed until future studies either support or refute the findings of the present study.

The second implication of this study's findings is that, although these findings are unexpected, the significant differences between the sample used in this study and the samples used in previous research suggest that age and other developmental issues might be mediators in the relationship between achievement goals and self-efficacy.

Developmental issues continue to be important in achievement goal theory and research related to changes in goal orientation across the life-span is nearly non-existent (Heckhausen & Dweck, 1998). It is recommended that further research be conducted on the ways age of age on impacts goal orientations. Although longitudinal studies would offer the best information, larger studies that include a variety of ages and life experiences might yield useful and actionable research results.

The third implication is that the findings of the present study suggest that of this study's findings is that alternative ways of conceptualizing the relationship between achievement goals and self-efficacy should be considered. In fact, post-hoc cluster analysis of the data used in the present study identified three clear goal profiles for the individuals in the study sample. That is, while the relationship between the separate mastery and performance goal orientation constructs did not have a relationship with post-training self-efficacy, the goal profiles (high mastery/high performance, moderate mastery/low performance, and moderate mastery/high performance) are proved to be significant predictors of changes in post-training self-efficacy. Although cluster analysis

and goal profiles are beyond the scope of the present study, goal profile research is a growing area where future study is needed. It is recommended, therefore, that further research on goal profiles be undertaken—using similar study samples—to better establish the existence of such clusters and to investigate the relationship of these profiles and self efficacy.

The final implication of this study’s findings is related to the two covariates (group membership and pre-training self-efficacy) that were significantly related to changes in post-training self-efficacy. That is, those individuals who were in the treatment group and received the training clearly had a more significant superior increase in post-training self efficacy related to the training. Likewise, individuals with lower self-efficacy prior to the training benefited more from the training, as is evidenced by their greatly increased post-training self-efficacy after the trainings. The obvious implication is that those having lower post-training self-efficacy scores prior to the training stand to benefit more from the training than others with higher pre-training self-efficacy scores. Gaining an understanding of an individual’s trainees’ pre-training self-efficacy prior to the delivery of the training might enable trainers to make adjustments to the training tasks’ level of difficulty. Such pre-training information could enhance the training, enabling trainers to tailor their offerings to specific audiences instead of “training to the middle.” For reasons like these, it is highly recommended that an assessment of pre-training self-efficacy be conducted prior to every HUD-funded training so training can better suit the needs of the expected trainees.

## **Conclusion**

The present study explored the extent to which three categories of goal orientation—mastery, performance-approach, and performance-avoid (Elliot's 2005)—could predict changes in post-training self-efficacy (Bandura 1997). The results of this study reveal indicate that goal orientation variables (mastery and performance), transfer-system variables (the opportunity to use learning and supervisory support), and demographic variables (age, years employed, organization type, job type, and education level) did not significantly influence changes in post-training self-efficacy. Only two covariates—group membership and pre-training self-efficacy—were significant and contributed significantly to the prediction of change in post-training self-efficacy. As a result of the present study, several recommendations are presented. The recommendations include: 1) postpone the decision to further research the interaction of goal orientations and structures within similar populations until future studies either support or refute the findings of the present study; 2) further research the impact of age and life experiences on goal orientations; 3) further research goal profiles using similar study samples to better establish the existence of such clusters and to investigate their relationship to post-training self-efficacy and other important training outcomes; and 4) assess pre-training self-efficacy prior to every HUD-funded training so training can better suit the needs of the expected trainees.

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## Appendices

Appendix A – Survey Instruments

## **Training Effectiveness Appraisal Pre-Training**

### **WIN A \$25 GIFT CERTIFICATE**

**The names of those participating in this study will  
be entered into a drawing at the end of the  
training!**

You are being invited to take part in a study that examines ways TDA can improve the effectiveness of its training offerings. The study will specifically assess the impact of individual trainee motivations on learning and on the eventual transfer of training to the workplace. The results of this study will enable TDA to better identify the needs and wants of its trainees and to incorporate their findings into the design and delivery of future trainings.

Your participation in this study is VOLUNTARY. If you agree to participate in this study, please complete it now. You will also be asked to complete a brief follow-up survey immediately after the training. All responses will be kept CONFIDENTIAL. No reference will be made, either orally or in written reports, that could link you to this study.

If at any time you have questions about the study or the procedures, you may contact Wayne Freeman at 910-277-1275 or [wfreeman@tdainc.org](mailto:wfreeman@tdainc.org). If you feel you have not been treated appropriately, you may also contact Arnold Bell at 919-515-4420. Mr. Bell may be reached by mail at Box 7514, N.C. State University Campus.

**The total time to complete both surveys is estimated to be 10-15  
minutes.**

### Sample Item

To familiarize yourself with the first section of the survey, please complete the following practice question.

Rate your degree of confidence by recording a number from 0 to 100 using the scale given below:

**0-----10-----20-----30-----40-----50-----60-----70-----80-----90-----100**  
**Cannot do at all-----Moderately can do-----Highly certain can do**

Lift a 10 pound object \_\_\_\_\_

Lift a 20 pound object \_\_\_\_\_

Lift a 50 pound object \_\_\_\_\_

Lift a 80 pound object \_\_\_\_\_

Lift a 100 pound object \_\_\_\_\_

Lift a 150 pound object \_\_\_\_\_

Lift a 200 pound object \_\_\_\_\_

Lift a 300 pound object \_\_\_\_\_

**Section I - Program Administration Difficulties**

This section is designed to help us gain a better understanding of the issues that create difficulties for professional administrators of HUD-funded programs for the homeless. Please indicate how certain you are that you can perform the tasks listed below. Rate your degree of confidence by recording a number from 0 to 100 using the scale given below:

**0-----10-----20-----30-----40-----50-----60-----70-----80-----90-----100**  
**Cannot do at all-----Moderately can do-----Highly certain can do**

- 1. Recite the three national goals of HUD’s homeless programs \_\_\_\_\_
- 2. Determine whether a client is homeless as defined by HUD \_\_\_\_\_
- 3. Determine whether a client has a disability as defined by HUD’s homeless programs \_\_\_\_\_
- 4. Maintain documentation that demonstrates the eligibility of clients served by HUD’s homeless programs \_\_\_\_\_
- 5. Assess clients and determine whether the Supportive Housing Program or the Shelter Plus Care Program better meets their needs \_\_\_\_\_
- 6. Identify the differences between supportive services costs and operating costs \_\_\_\_\_
- 7. Identify eligible match sources for the SHP Program and the Shelter Plus Care Program \_\_\_\_\_
- 8. Calculate the monthly rent contribution of HUD-eligible clients \_\_\_\_\_
- 9. Determine which scenarios justify termination of a client’s support services \_\_\_\_\_
- 10. Use HUD’s language to define “chronic homelessness” \_\_\_\_\_
- 11. Determine whether certain costs that might be charged to a HUD homeless grant are eligible for federal reimbursement \_\_\_\_\_

## Section II - Individual Approaches to Training

This section is designed to help us better understand a participant's motivation as it relates to THIS TRAINING. A five-point scale ranging from "Strongly Disagree" to "Strongly Agree" is used. Please indicate the extent to which you agree with the following statements by CIRCLING the appropriate response.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
12. My aim is to completely master the material presented in this training.	1	2	3	4	5
13. My aim is to perform well relative to other students in this training.	1	2	3	4	5
14. My aim is to avoid doing worse than other students in this training.	1	2	3	4	5
15. I am striving to understand the content of this course as thoroughly as possible.	1	2	3	4	5
16. I am striving to do well compared to other students in this training.	1	2	3	4	5
17. I am striving to avoid performing worse than others in this training.	1	2	3	4	5
18. My goal is to learn as much as possible in this training.	1	2	3	4	5
19. My goal is to perform better than the other students in this training.	1	2	3	4	5
20. My goal is to avoid performing poorly compared to others in this training.	1	2	3	4	5
21. I presently have an expert level of knowledge of the material that will be covered in this training.	1	2	3	4	5



26. How many years have you been employed by your present employer? \_\_\_\_\_

27. What was your age on your last birthday? \_\_\_\_\_

28. What are your first and last names? \_\_\_\_\_

THANK YOU FOR COMPLETING THE SURVEY

Feel free to provide, on the back of this page, any additional comments that you may have.

# Training Effectiveness Appraisal Post-Training

This survey should be completed by participants that attended the training AND completed the pre-training survey. Study participants are eligible for a **\$25 Gift Certificate** to be awarded at the end of the training.

## Sample Item

To familiarize yourself with the first section of the post-test, please complete the following question.

How certain are you that you can lift the weights described below? Rate your degree of confidence by recording a number from 0 to 100 using the scale given below:

**0-----10-----20-----30-----40-----50-----60-----70-----80-----90-----100**  
**Cannot do at all-----Moderately can do-----Highly certain can do**

Lift a 10 pound object \_\_\_\_\_

Lift a 20 pound object \_\_\_\_\_

Lift a 50 pound object \_\_\_\_\_

Lift a 80 pound object \_\_\_\_\_

Lift a 100 pound object \_\_\_\_\_

Lift a 150 pound object \_\_\_\_\_

Lift a 200 pound object \_\_\_\_\_

Lift a 300 pound object \_\_\_\_\_

**Section I - Program Administration Difficulties**

This section is designed to help us gain a better understanding of the issues that create difficulties for professional administrators of HUD-funded programs for the homeless. Please indicate how certain you are that you can perform the tasks listed below. Rate your degree of confidence by entering a number from 0 to 100 using the scale given below:

**0-----10-----20-----30-----40-----50-----60-----70-----80-----90-----100**  
**Cannot do at all-----Moderately can do-----Highly certain can do**

- 1. Recite the three national goals of HUD’s homeless programs \_\_\_\_\_
- 2. Determine whether a client is homeless as defined by HUD \_\_\_\_\_
- 3. Determine whether a client has a disability as defined by HUD’s homeless programs \_\_\_\_\_
- 4. Maintain documentation that demonstrates the eligibility of clients served by HUD’s homeless programs \_\_\_\_\_
- 5. Assess clients and determine whether the Supportive Housing Program or the Shelter Plus Care program is most appropriate to serve them \_\_\_\_\_
- 6. Identify the differences between supportive services costs and operating costs \_\_\_\_\_
- 7. Identify eligible match sources for the SHP and the Shelter Plus Care Program \_\_\_\_\_
- 8. Calculate the monthly rent contribution of HUD-eligible clients \_\_\_\_\_
- 9. Determine which scenarios justify termination of a client’s support services \_\_\_\_\_
- 10. Define “chronic homelessness” using HUD’s language \_\_\_\_\_
- 11. Determine whether certain costs that might be charged to a HUD homeless grant are eligible for federal reimbursement \_\_\_\_\_

## Section II – Transfer of Training to the Workplace

This section is designed to help us better understand factors that impact the transfer of training to the workplace. A five- point scale ranging from “Strongly Disagree” to “Strongly Agree” is used. Please indicate the extent to which you agree with the following statements by marking the appropriate response.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
12. My workload allows me to try the new things I have learned.	1	2	3	4	5
13. Training will increase my personal productivity.	1	2	3	4	5
14. My supervisor sets goals that encourage me to apply my training on the job.	1	2	3	4	5
15. I have time in my schedule to change the way I do things so as to accommodate my new learning.	1	2	3	4	5
16. I can't wait to get back to work to try what I have learned.	1	2	3	4	5
17. I have access to enough human resources to support my use of the skills I acquired in training.	1	2	3	4	5
18. I believe the training will help me do my current job better.	1	2	3	4	5
19. Our current staffing level cannot adequately support my use of this training.	1	2	3	4	5
20. My supervisor will meet with me regularly to work on problems I may encounter while trying to implement my training.	1	2	3	4	5
21. My supervisor will meet with me to discuss ways of applying my training to the job.	1	2	3	4	5
22. I presently have an expert level of knowledge of the material that was covered in this training.	1	2	3	4	5
23. What is your first and last name?					

## Appendix B - Descriptive Statistics of Treatment Group

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Descriptive Statistics						
	N					
	Valid	Missing	Mean	Std. Deviation	Minimum	Maximum
AGE	113	0	44.947	11.1754	22.0	68.0
EDUC	113	0	3.037	.9251	1.0	4.0
ORGTYPE	113	0	1.1062	.30946	1.00	2.00
JOBTYPE	113	0	1.4867	.50205	1.00	2.00
YRSEMP	113	0	6.063	5.2225	1.0	23.0
SE1	113	0	39.1061	35.94283	-70.00	100.00
SE3	113	0	18.1091	25.38035	-25.00	80.00
SE5	113	0	13.6082	27.27603	-50.00	80.00
SE7	113	0	18.8242	28.64784	-50.00	90.00
SE8	113	0	20.3877	33.32331	-75.00	100.00
SE9	113	0	21.7384	30.07959	-60.00	100.00
SE11	113	0	24.1558	30.18051	-40.00	100.00
GOM1	113	0	4.442	.5500	3.0	5.0
GOM2	113	0	4.690	.4833	3.0	5.0
GOM3	113	0	4.805	.3977	4.0	5.0
GOP1	113	0	3.929	1.0583	1.0	5.0
GOP2	113	0	3.593	1.2722	1.0	5.0
GOP3	113	0	3.292	1.3737	1.0	5.0
GOA1	113	0	3.381	1.3908	1.0	5.0
GOA2	113	0	3.329	1.4104	1.0	5.0
GOA3	113	0	3.381	1.3908	1.0	5.0
OU1	113	0	4.186	.7967	2.0	5.0
OU2	113	0	3.956	.8700	2.0	5.0
OU3	113	0	3.704	.9604	1.0	5.0
SS1	113	0	3.961	.8922	1.0	5.0
SS2	113	0	3.616	1.0026	1.0	5.0

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**Descriptive Statistics**

	N		Mean	Std. Deviation	Minimum	Maximum
	Valid	Missing				
AGE	113	0	44.947	11.1754	22.0	68.0
EDUC	113	0	3.037	.9251	1.0	4.0
ORGTTYPE	113	0	1.1062	.30946	1.00	2.00
JOBTYPE	113	0	1.4867	.50205	1.00	2.00
YRSEMP	113	0	6.063	5.2225	1.0	23.0
SE1	113	0	39.1061	35.94283	-70.00	100.00
SE3	113	0	18.1091	25.38035	-25.00	80.00
SE5	113	0	13.6082	27.27603	-50.00	80.00
SE7	113	0	18.8242	28.64784	-50.00	90.00
SE8	113	0	20.3877	33.32331	-75.00	100.00
SE9	113	0	21.7384	30.07959	-60.00	100.00
SE11	113	0	24.1558	30.18051	-40.00	100.00
GOM1	113	0	4.442	.5500	3.0	5.0
GOM2	113	0	4.690	.4833	3.0	5.0
GOM3	113	0	4.805	.3977	4.0	5.0
GOP1	113	0	3.929	1.0583	1.0	5.0
GOP2	113	0	3.593	1.2722	1.0	5.0
GOP3	113	0	3.292	1.3737	1.0	5.0
GOA1	113	0	3.381	1.3908	1.0	5.0
GOA2	113	0	3.329	1.4104	1.0	5.0
GOA3	113	0	3.381	1.3908	1.0	5.0
OU1	113	0	4.186	.7967	2.0	5.0
OU2	113	0	3.956	.8700	2.0	5.0
OU3	113	0	3.704	.9604	1.0	5.0
SS1	113	0	3.961	.8922	1.0	5.0
SS2	113	0	3.616	1.0026	1.0	5.0
SS3	113	0	3.559	.9967	1.0	5.0

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## Frequency Tables

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<b>EDUC</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
High School	11	9.7	9.7	9.7
Two Year Degree	13	11.5	11.5	21.2
Four Year Degree	50	44.3	44.3	65.5
Graduate degree	39	34.5	34.5	100.0
<b>Total</b>	<b>113</b>	<b>100.0</b>	<b>100.0</b>	

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<b>ORGTTYPE</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
Nonprofit	101	89.4	89.4	89.4
Other	12	10.6	10.6	100.0
<b>Total</b>	<b>113</b>	<b>100.0</b>	<b>100.0</b>	

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<b>JOBTYPE</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
Upper Management	58	51.3	51.3	51.3
Other	55	48.7	48.7	100.0
<b>Total</b>	<b>113</b>	<b>100.0</b>	<b>100.0</b>	

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		<b>SE1</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-70.00	1	.9	.9	.9
	-15.01	1	.9	.9	1.8
	-10.00	1	.9	.9	2.7
	.00	22	19.5	19.5	22.1
	10.00	13	11.5	11.5	33.6
	15.00	1	.9	.9	34.5
	20.00	7	6.2	6.2	40.7
	25.00	2	1.8	1.8	42.5
	30.00	10	8.8	8.8	51.3
	40.00	7	6.2	6.2	57.5
	49.00	1	.9	.9	58.4
	50.00	11	9.7	9.7	68.1
	60.00	4	3.5	3.5	71.7
	70.00	6	5.3	5.3	77.0
	80.00	11	9.7	9.7	86.7
	90.00	4	3.5	3.5	90.3
	100.00	11	9.7	9.7	100.0
	Total	113	100.0	100.0	

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<b>SE3</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-25.00	1	.9	.9	.9
	-20.00	3	2.7	2.7	3.5
	-10.00	4	3.5	3.5	7.1
	.00	40	35.4	35.4	42.5
	10.00	18	15.9	15.9	58.4
	11.33	1	.9	.9	59.3
	15.00	1	.9	.9	60.2
	20.00	13	11.5	11.5	71.7
	25.00	1	.9	.9	72.6
	30.00	4	3.5	3.5	76.1
	40.00	6	5.3	5.3	81.4
	50.00	7	6.2	6.2	87.6
	60.00	6	5.3	5.3	92.9
	70.00	3	2.7	2.7	95.6
	80.00	5	4.4	4.4	100.0
	Total	113	100.0	100.0	

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<b>SE5</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-50.00	2	1.8	1.8	1.8
	-40.00	1	.9	.9	2.7
	-30.00	2	1.8	1.8	4.4
	-20.00	4	3.5	3.5	8.0
	-10.00	9	8.0	8.0	15.9
	-5.00	2	1.8	1.8	17.7
	-1.00	1	.9	.9	18.6
	.00	32	28.3	28.3	46.9
	5.00	2	1.8	1.8	48.7
	10.00	16	14.2	14.2	62.8
	18.72	1	.9	.9	63.7
	20.00	10	8.8	8.8	72.6
	30.00	12	10.6	10.6	83.2
	40.00	3	2.7	2.7	85.8
	50.00	6	5.3	5.3	91.2
	60.00	1	.9	.9	92.0
	70.00	3	2.7	2.7	94.7
	80.00	6	5.3	5.3	100.0
	Total	113	100.0	100.0	

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<b>SE7</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-50.00	1	.9	.9	.9
	-40.00	1	.9	.9	1.8
	-35.00	1	.9	.9	2.7
	-30.00	3	2.7	2.7	5.3
	-20.00	3	2.7	2.7	8.0
	-10.00	7	6.2	6.2	14.2
	.00	19	16.8	16.8	31.0
	5.00	2	1.8	1.8	32.7
	9.00	1	.9	.9	33.6
	10.00	18	15.9	15.9	49.6
	15.00	2	1.8	1.8	51.3
	18.13	1	.9	.9	52.2
	20.00	17	15.0	15.0	67.3
	30.00	13	11.5	11.5	78.8
	40.00	6	5.3	5.3	84.1
	50.00	4	3.5	3.5	87.6
	60.00	3	2.7	2.7	90.3
	70.00	4	3.5	3.5	93.8
	75.00	1	.9	.9	94.7
	80.00	2	1.8	1.8	96.5
	90.00	4	3.5	3.5	100.0
	Total	113	100.0	100.0	

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<b>SE8</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-75.00	1	.9	.9	.9
	-50.00	1	.9	.9	1.8
	-40.00	1	.9	.9	2.7
	-30.00	1	.9	.9	3.5
	-20.00	1	.9	.9	4.4
	-16.69	1	.9	.9	5.3
	-10.00	4	3.5	3.5	8.8
	-5.00	2	1.8	1.8	10.6
	.00	39	34.5	34.5	45.1
	5.00	1	.9	.9	46.0
	10.00	14	12.4	12.4	58.4
	10.51	1	.9	.9	59.3
	15.00	2	1.8	1.8	61.1
	20.00	6	5.3	5.3	66.4
	30.00	7	6.2	6.2	72.6
	40.00	5	4.4	4.4	77.0
	50.00	5	4.4	4.4	81.4
	60.00	4	3.5	3.5	85.0
	70.00	7	6.2	6.2	91.2
	80.00	3	2.7	2.7	93.8
	90.00	5	4.4	4.4	98.2
	100.00	2	1.8	1.8	100.0
	Total	113	100.0	100.0	

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<b>SE9</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-60.00	1	.9	.9	.9
	-50.00	1	.9	.9	1.8
	-40.00	1	.9	.9	2.7
	-20.00	2	1.8	1.8	4.4
	-10.00	6	5.3	5.3	9.7
	.00	27	23.9	23.9	33.6
	5.00	2	1.8	1.8	35.4
	10.00	18	15.9	15.9	51.3
	20.00	11	9.7	9.7	61.1
	21.44	1	.9	.9	61.9
	25.00	1	.9	.9	62.8
	30.00	9	8.0	8.0	70.8
	40.00	8	7.1	7.1	77.9
	50.00	10	8.8	8.8	86.7
	60.00	3	2.7	2.7	89.4
	70.00	4	3.5	3.5	92.9
	80.00	5	4.4	4.4	97.3
	100.00	3	2.7	2.7	100.0
	Total	113	100.0	100.0	

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<b>SE11</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-40.00	1	.9	.9	.9
	-30.00	3	2.7	2.7	3.5
	-20.00	1	.9	.9	4.4
	-10.00	6	5.3	5.3	9.7
	.00	26	23.0	23.0	32.7
	5.00	1	.9	.9	33.6
	10.00	14	12.4	12.4	46.0
	15.00	1	.9	.9	46.9
	20.00	13	11.5	11.5	58.4
	25.00	1	.9	.9	59.3
	30.00	9	8.0	8.0	67.3
	39.80	1	.9	.9	68.1
	40.00	9	8.0	8.0	76.1
	50.00	9	8.0	8.0	84.1
	60.00	5	4.4	4.4	88.5
	70.00	4	3.5	3.5	92.0
	75.00	1	.9	.9	92.9
	79.80	1	.9	.9	93.8
	80.00	2	1.8	1.8	95.6
	90.00	2	1.8	1.8	97.3
	100.00	3	2.7	2.7	100.0
	<b>Total</b>	<b>113</b>	<b>100.0</b>	<b>100.0</b>	

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<b>GOM1</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.0	3	2.7	2.7	2.7
	4.0	57	50.4	50.4	53.1
	5.0	53	46.9	46.9	100.0
	Total	113	100.0	100.0	

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<b>GOM2</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.0	1	.9	.9	.9
	4.0	33	29.2	29.2	30.1
	5.0	79	69.9	69.9	100.0
	Total	113	100.0	100.0	

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<b>GOM3</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.0	22	19.5	19.5	19.5
	5.0	91	80.5	80.5	100.0
	Total	113	100.0	100.0	

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<b>GOP1</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	4	3.5	3.5	3.5
	2.0	11	9.7	9.7	13.3
	3.0	10	8.8	8.8	22.1
	4.0	52	46.0	46.0	68.1
	5.0	36	31.9	31.9	100.0
	Total	113	100.0	100.0	

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<b>GOP2</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	9	8.0	8.0	8.0
	2.0	19	16.8	16.8	24.8
	3.0	12	10.6	10.6	35.4
	4.0	42	37.2	37.2	72.6
	5.0	31	27.4	27.4	100.0
	Total	113	100.0	100.0	

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<b>GOP3</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	16	14.2	14.2	14.2
	2.0	20	17.7	17.7	31.9
	3.0	18	15.9	15.9	47.8
	4.0	33	29.2	29.2	77.0
	5.0	26	23.0	23.0	100.0
	Total	113	100.0	100.0	

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<b>GOA1</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	15	13.3	13.3	13.3
	2.0	21	18.6	18.6	31.9
	3.0	12	10.6	10.6	42.5
	4.0	36	31.9	31.9	74.3
	5.0	29	25.7	25.7	100.0
	Total	113	100.0	100.0	

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<b>GOA2</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	17	15.0	15.0	15.0
	2.0	20	17.7	17.7	32.7
	3.0	12	10.6	10.6	43.4
	3.2	1	.9	.9	44.2
	4.0	35	31.0	31.0	75.2
	5.0	28	24.8	24.8	100.0
	Total	113	100.0	100.0	

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<b>GOA3</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	17	15.0	15.0	15.0
	2.0	17	15.0	15.0	30.1
	3.0	12	10.6	10.6	40.7
	4.0	40	35.4	35.4	76.1
	5.0	27	23.9	23.9	100.0
	Total	113	100.0	100.0	

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<b>OU1</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.0	6	5.3	5.3	5.3
	3.0	9	8.0	8.0	13.3
	4.0	56	49.6	49.6	62.8
	5.0	42	37.2	37.2	100.0
	Total	113	100.0	100.0	

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<b>OU2</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.0	9	8.0	8.0	8.0
	3.0	18	15.9	15.9	23.9
	4.0	55	48.7	48.7	72.6
	5.0	31	27.4	27.4	100.0
	Total	113	100.0	100.0	

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<b>OU3</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	1	.9	.9	.9
	2.0	14	12.4	12.4	13.3
	3.0	25	22.1	22.1	35.4
	3.6	1	.9	.9	36.3
	4.0	49	43.4	43.4	79.6
	5.0	23	20.4	20.4	100.0
	Total	113	100.0	100.0	

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<b>SS1</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	2	1.8	1.8	1.8
	2.0	5	4.4	4.4	6.2
	3.0	19	16.8	16.8	23.0
	3.8	6	5.3	5.3	28.3
	4.0	49	43.4	43.4	71.7
	5.0	32	28.3	28.3	100.0
Total		113	100.0	100.0	

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<b>SS2</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	4	3.5	3.5	3.5
	2.0	10	8.8	8.8	12.4
	3.0	28	24.8	24.8	37.2
	3.4	9	8.0	8.0	45.1
	4.0	40	35.4	35.4	80.5
	5.0	22	19.5	19.5	100.0
Total		113	100.0	100.0	

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<b>SS3</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	4	3.5	3.5	3.5
	2.0	12	10.6	10.6	14.2
	3.0	26	23.0	23.0	37.2
	3.4	11	9.7	9.7	46.9
	4.0	41	36.3	36.3	83.2
	5.0	19	16.8	16.8	100.0
	Total	113	100.0	100.0	

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## Appendix C - Descriptive Statistics of Control Group

Descriptive Statistics						
	N					
	Valid	Missing	Mean	Std. Deviation	Minimum	Maximum
AGE	59	0	46.017	9.6873	23.0	62.0
EDUC	59	0	3.136	.8994	1.0	4.0
ORGTYPE	59	0	1.2542	.43917	1.00	2.00
JOBTYPE	59	0	1.3051	.46440	1.00	2.00
YRSEMP	59	0	6.720	5.0466	1.0	23.0
SE1	59	0	6.5254	23.10497	-40.00	80.00
SE3	59	0	.1017	12.15233	-30.00	30.00
SE5	59	0	.5254	19.95889	-50.00	80.00
SE7	59	0	.2203	19.99230	-50.00	55.00
SE8	59	0	1.9492	17.78747	-50.00	60.00
SE9	59	0	6.3729	23.93951	-60.00	80.00
SE11	59	0	7.3390	20.85964	-30.00	100.00
GOM1	59	0	4.271	.7151	3.0	5.0
GOM2	59	0	4.678	.5065	3.0	5.0
GOM3	59	0	4.831	.3784	4.0	5.0
GOP1	59	0	3.576	1.2346	1.0	5.0
GOP2	59	0	3.356	1.2284	1.0	5.0
GOP3	59	0	3.102	1.1094	1.0	5.0
GOA1	59	0	2.898	1.4820	1.0	5.0
GOA2	59	0	2.983	1.4080	1.0	5.0
GOA3	59	0	2.983	1.4323	1.0	5.0
OU1	59	0	3.712	.9835	2.0	5.0
OU2	59	0	3.593	.9670	2.0	5.0
OU3	59	0	3.254	.8827	1.0	4.0
SS1	59	0	3.305	1.1026	1.0	5.0
SS2	59	0	3.000	1.2177	1.0	5.0

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**Descriptive Statistics**

	N		Mean	Std. Deviation	Minimum	Maximum
	Valid	Missing				
AGE	59	0	46.017	9.6873	23.0	62.0
EDUC	59	0	3.136	.8994	1.0	4.0
ORGTTYPE	59	0	1.2542	.43917	1.00	2.00
JOBTYPE	59	0	1.3051	.46440	1.00	2.00
YRSEMP	59	0	6.720	5.0466	1.0	23.0
SE1	59	0	6.5254	23.10497	-40.00	80.00
SE3	59	0	.1017	12.15233	-30.00	30.00
SE5	59	0	.5254	19.95889	-50.00	80.00
SE7	59	0	.2203	19.99230	-50.00	55.00
SE8	59	0	1.9492	17.78747	-50.00	60.00
SE9	59	0	6.3729	23.93951	-60.00	80.00
SE11	59	0	7.3390	20.85964	-30.00	100.00
GOM1	59	0	4.271	.7151	3.0	5.0
GOM2	59	0	4.678	.5065	3.0	5.0
GOM3	59	0	4.831	.3784	4.0	5.0
GOP1	59	0	3.576	1.2346	1.0	5.0
GOP2	59	0	3.356	1.2284	1.0	5.0
GOP3	59	0	3.102	1.1094	1.0	5.0
GOA1	59	0	2.898	1.4820	1.0	5.0
GOA2	59	0	2.983	1.4080	1.0	5.0
GOA3	59	0	2.983	1.4323	1.0	5.0
OU1	59	0	3.712	.9835	2.0	5.0
OU2	59	0	3.593	.9670	2.0	5.0
OU3	59	0	3.254	.8827	1.0	4.0
SS1	59	0	3.305	1.1026	1.0	5.0
SS2	59	0	3.000	1.2177	1.0	5.0
SS3	59	0	3.017	1.2386	1.0	5.0

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## Frequency Tables

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<b>EDUC</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
High School	4	6.8	6.8	6.8
Two Year Degree	8	13.6	13.6	20.3
Four Year Degree	23	39.0	39.0	59.3
Graduate degree	24	40.7	40.7	100.0
Total	59	100.0	100.0	

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<b>ORGTTYPE</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Nonprofit	44	74.6	74.6	74.6
	Other	15	25.4	25.4	100.0
	Total	59	100.0	100.0	

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<b>JOBTYPE</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
	Upper Management	41	69.5	69.5	69.5
	Other	18	30.5	30.5	100.0
	Total	59	100.0	100.0	

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		<b>SE1</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-40.00	1	1.7	1.7	1.7
	-35.00	1	1.7	1.7	3.4
	-30.00	1	1.7	1.7	5.1
	-20.00	3	5.1	5.1	10.2
	-10.00	5	8.5	8.5	18.6
	-5.00	1	1.7	1.7	20.3
	.00	26	44.1	44.1	64.4
	5.00	1	1.7	1.7	66.1
	10.00	7	11.9	11.9	78.0
	20.00	4	6.8	6.8	84.7
	30.00	3	5.1	5.1	89.8
	40.00	1	1.7	1.7	91.5
	50.00	2	3.4	3.4	94.9
	60.00	1	1.7	1.7	96.6
	80.00	2	3.4	3.4	100.0
	Total	59	100.0	100.0	

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<b>SE3</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-30.00	3	5.1	5.1	5.1
	-20.00	2	3.4	3.4	8.5
	-10.00	6	10.2	10.2	18.6
	-5.00	4	6.8	6.8	25.4
	-4.00	1	1.7	1.7	27.1
	.00	29	49.2	49.2	76.3
	5.00	2	3.4	3.4	79.7
	10.00	5	8.5	8.5	88.1
	20.00	5	8.5	8.5	96.6
	30.00	2	3.4	3.4	100.0
	Total	59	100.0	100.0	

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<b>SE5</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-50.00	1	1.7	1.7	1.7
	-40.00	2	3.4	3.4	5.1
	-30.00	1	1.7	1.7	6.8
	-25.00	1	1.7	1.7	8.5
	-20.00	3	5.1	5.1	13.6
	-14.00	1	1.7	1.7	15.3
	-10.00	6	10.2	10.2	25.4
	-5.00	3	5.1	5.1	30.5
	.00	24	40.7	40.7	71.2
	10.00	10	16.9	16.9	88.1
	20.00	3	5.1	5.1	93.2
	40.00	2	3.4	3.4	96.6
	45.00	1	1.7	1.7	98.3
	80.00	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

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<b>SE7</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-50.00	1	1.7	1.7	1.7
	-40.00	2	3.4	3.4	5.1
	-30.00	2	3.4	3.4	8.5
	-20.00	6	10.2	10.2	18.6
	-15.00	1	1.7	1.7	20.3
	-14.00	1	1.7	1.7	22.0
	-10.00	4	6.8	6.8	28.8
	-8.00	1	1.7	1.7	30.5
	-5.00	1	1.7	1.7	32.2
	.00	22	37.3	37.3	69.5
	5.00	1	1.7	1.7	71.2
	10.00	4	6.8	6.8	78.0
	15.00	1	1.7	1.7	79.7
	20.00	7	11.9	11.9	91.5
	30.00	2	3.4	3.4	94.9
	40.00	1	1.7	1.7	96.6
	50.00	1	1.7	1.7	98.3
	55.00	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

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<b>SE8</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-50.00	2	3.4	3.4	3.4
	-40.00	1	1.7	1.7	5.1
	-30.00	1	1.7	1.7	6.8
	-20.00	2	3.4	3.4	10.2
	-10.00	4	6.8	6.8	16.9
	-5.00	2	3.4	3.4	20.3
	.00	24	40.7	40.7	61.0
	5.00	3	5.1	5.1	66.1
	10.00	11	18.6	18.6	84.7
	15.00	2	3.4	3.4	88.1
	20.00	3	5.1	5.1	93.2
	30.00	2	3.4	3.4	96.6
	40.00	1	1.7	1.7	98.3
	60.00	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

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<b>SE9</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-60.00	1	1.7	1.7	1.7
	-30.00	2	3.4	3.4	5.1
	-20.00	3	5.1	5.1	10.2
	-19.00	1	1.7	1.7	11.9
	-15.00	1	1.7	1.7	13.6
	-10.00	7	11.9	11.9	25.4
	.00	17	28.8	28.8	54.2
	5.00	3	5.1	5.1	59.3
	10.00	8	13.6	13.6	72.9
	15.00	2	3.4	3.4	76.3
	20.00	6	10.2	10.2	86.4
	30.00	2	3.4	3.4	89.8
	40.00	1	1.7	1.7	91.5
	50.00	2	3.4	3.4	94.9
	60.00	1	1.7	1.7	96.6
	75.00	1	1.7	1.7	98.3
	80.00	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

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<b>SE11</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-30.00	1	1.7	1.7	1.7
	-20.00	2	3.4	3.4	5.1
	-10.00	9	15.3	15.3	20.3
	-8.00	1	1.7	1.7	22.0
	-5.00	2	3.4	3.4	25.4
	.00	15	25.4	25.4	50.8
	1.00	1	1.7	1.7	52.5
	5.00	2	3.4	3.4	55.9
	10.00	11	18.6	18.6	74.6
	15.00	1	1.7	1.7	76.3
	20.00	10	16.9	16.9	93.2
	50.00	1	1.7	1.7	94.9
	60.00	1	1.7	1.7	96.6
	65.00	1	1.7	1.7	98.3
	100.00	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

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<b>GOM1</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.0	9	15.3	15.3	15.3
	4.0	25	42.4	42.4	57.6
	5.0	25	42.4	42.4	100.0
	Total	59	100.0	100.0	

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<b>GOM2</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.0	1	1.7	1.7	1.7
	4.0	17	28.8	28.8	30.5
	5.0	41	69.5	69.5	100.0
	Total	59	100.0	100.0	

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<b>GOM3</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.0	10	16.9	16.9	16.9
	5.0	49	83.1	83.1	100.0
	Total	59	100.0	100.0	

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<b>GOP1</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	4	6.8	6.8	6.8
	2.0	10	16.9	16.9	23.7
	3.0	8	13.6	13.6	37.3
	4.0	22	37.3	37.3	74.6
	5.0	15	25.4	25.4	100.0
	Total	59	100.0	100.0	

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<b>GOP2</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	5	8.5	8.5	8.5
	2.0	12	20.3	20.3	28.8
	3.0	9	15.3	15.3	44.1
	4.0	23	39.0	39.0	83.1
	5.0	10	16.9	16.9	100.0
	Total	59	100.0	100.0	

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<b>GOP3</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	4	6.8	6.8	6.8
	2.0	15	25.4	25.4	32.2
	3.0	17	28.8	28.8	61.0
	4.0	17	28.8	28.8	89.8
	5.0	6	10.2	10.2	100.0
	Total	59	100.0	100.0	

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<b>GOA1</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	14	23.7	23.7	23.7
	2.0	14	23.7	23.7	47.5
	3.0	6	10.2	10.2	57.6
	4.0	14	23.7	23.7	81.4
	5.0	11	18.6	18.6	100.0
	Total	59	100.0	100.0	

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<b>GOA2</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	11	18.6	18.6	18.6
	2.0	14	23.7	23.7	42.4
	3.0	10	16.9	16.9	59.3
	4.0	13	22.0	22.0	81.4
	5.0	11	18.6	18.6	100.0
	Total	59	100.0	100.0	

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<b>GOA3</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	11	18.6	18.6	18.6
	2.0	15	25.4	25.4	44.1
	3.0	9	15.3	15.3	59.3
	4.0	12	20.3	20.3	79.7
	5.0	12	20.3	20.3	100.0
	Total	59	100.0	100.0	

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<b>OU1</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.0	11	18.6	18.6	18.6
	3.0	6	10.2	10.2	28.8
	4.0	31	52.5	52.5	81.4
	5.0	11	18.6	18.6	100.0

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<b>OU1</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.0	11	18.6	18.6	18.6
	3.0	6	10.2	10.2	28.8
	4.0	31	52.5	52.5	81.4
	5.0	11	18.6	18.6	100.0
	Total	59	100.0	100.0	

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<b>OU2</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.0	12	20.3	20.3	20.3
	3.0	8	13.6	13.6	33.9
	4.0	31	52.5	52.5	86.4
	5.0	8	13.6	13.6	100.0
	Total	59	100.0	100.0	

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<b>OU3</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	1	1.7	1.7	1.7
	2.0	14	23.7	23.7	25.4
	3.0	13	22.0	22.0	47.5
	4.0	31	52.5	52.5	100.0
	Total	59	100.0	100.0	

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<b>SS1</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	2	3.4	3.4	3.4
	2.0	16	27.1	27.1	30.5
	3.0	10	16.9	16.9	47.5
	4.0	24	40.7	40.7	88.1
	5.0	7	11.9	11.9	100.0
Total		59	100.0	100.0	

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<b>SS2</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	7	11.9	11.9	11.9
	2.0	16	27.1	27.1	39.0
	3.0	12	20.3	20.3	59.3
	4.0	18	30.5	30.5	89.8
	5.0	6	10.2	10.2	100.0
Total		59	100.0	100.0	

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<b>SS3</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	7	11.9	11.9	11.9
	2.0	16	27.1	27.1	39.0
	3.0	12	20.3	20.3	59.3
	4.0	17	28.8	28.8	88.1
	5.0	7	11.9	11.9	100.0
Total		59	100.0	100.0	

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