

WHAT DOES THAT PIECE OF PAPER REALLY MEAN? AN INQUIRY INTO
CERTIFICATION MOTIVATION

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ABSTRACT

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Though under-analyzed, third-party employee competency certifications are increasing in number; many feel that accumulation of certifications is essential for career success. I argue that in their current form, certifications are double-edged: their purpose is to reduce transaction costs, enhance performance, and foster development; but they can also be used as "credentials" to gain prestige, rewards or influence. I suggest that excessive use for this latter purpose can undermine their contribution to performance. In this study of HR practitioners that draws on Self-Determination Theory (SDT), I test the relationship between certification-seeking motivation and obtaining certification, perceived job competence, and affective occupational commitment. Hierarchical regression results show an association between autonomous motivation and both obtaining certification and commitment; however, professional association membership may also play a role in fostering such motivation. I end with suggestions for future research.

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CHAPTER 1 INTRODUCTION

Certification of employee competencies is a widespread and growing phenomenon in labor markets (Carter, 2005; Harris & Barnhart, 2001; Moran, 1996; Pare, 1999; Wiley, 1995). The growth is so large that regulation is necessary; an organization has arisen (the National Organization for Competency Assurance) that provides support for employee certification agencies and gives guidance on how to start new ones (www.noca.org). The topic of certification has stimulated a good deal of practical and methodological literature (e.g. Hale, 2000; Livingood & Auld, 2001; e.g. Raymond, 2001). But there is surprisingly little behavioral research on the certification process (but see Wiley, 1992, 1995, 1999). More specifically, (1) what currently motivates individuals to seek certification, and (2) what outcomes can be drawn from individuals' certification motives?

In this chapter, I will provide a background for the construct of certification. I will then discuss why certification is an important topic for research, especially given that there is a rather large lacuna in the research on certification motivation. Next, I will briefly lay out the theoretical model that I will utilize in the remainder of this dissertation. Finally, I will touch upon the study performed, define concepts that are unique in this study, and discuss study limitations.

Background

In surveying the plethora of available certifications, one can observe that certification has a *double-edged* character (cf. Ashforth & Gibbs, 1990; Kleiner, 2006). On the one hand, the avowed purpose is to attest to worker competency, foster employee development and ultimately improve work performance (Kleiner, 2006; Livingood & Auld, 2001; Raymond, 2001). This

might be referred to as “being good” (cf. Gioia & Corley, 2002). On the other hand, certifications are potent symbols that can be used by workers to gain jobs and higher pay, and by employers to garner prestige and influence. This function can be called “looking good” (Gioia & Corley, 2002) While both “being good” and “looking good” have a legitimate place, I agree with critics (Collins, 1979, 2007; Labaree, 1997) who suggest that excessive focus on the latter can undermine the effectiveness of certification systems and waste effort and resources. Both Collins (2007) and Labaree (1997) do not deny that individuals can use credentials for social mobility. Yet, as Labaree (1997) rightly notes, the focus on social mobility comes into direct conflict with another focus – societal education. One of the goals of this study is to help reconcile these dissonant motives.

While much certification literature has focused on educational systems, this study will focus on professional certification. Though education and school is mandatory, and many certifications are voluntary, the conflict of being good versus looking good still applies here since both knowledge and politicking can lead to career advancement. Along those lines, this study will focus on a certification that has increased almost 30 fold since 1990, the PHR/SPHR/GPHR designation for Human Resource Professionals.

HR Certifications are examples of certifications that are increasing in popularity, but remain relatively unexplored in academic research. More and more research calls for HR policies to be more strategic, with more and more studies arising which link HR policies to organizational performance (Boxall & Purcell, 2000; Wright, Snell, & Dyer, 2005). One way to move HR past the prior designation of “Personnel” is to certify the competency of its practitioners. Hence, professional certification in human resources is further evidence that the HR profession can no longer simply be considered an administrative function. Yet, how credible

are these certifications in meeting the intended goals? With the number of certified HR professionals on the rise (<http://www.hrci.org>), and with the move to more strategic human resource research, the time is right to begin assessing the effects of certification in HR.

The Human Resources Certification Institute (<http://www.hrci.org>) is the certifying body for the PHR/SPHR/GPHR designations. HRCI has a detailed manual available on their website for practitioners interested in descriptive data concerning certification in human resources. In their manual, HRCI provides a definition for certification:

“Certification is a voluntary action by a professional group to establish a system to grant recognition to professionals who have met a stated level of training and work experience.”
(www.hrci.org)

In addition to signaling a level of competency, HRCI also states several other benefits of obtaining certification. HRCI states that certification sets those with the credential apart from those without the credential. In addition to providing information about a person’s skill level, HRCI also states that certification “becomes a public recognition of professional achievement within and outside of the profession.” Plus, the institute states that “certification becomes a personal professional goal—a way to test knowledge and to measure it against one’s peers.” The final point listed by HRCI is that “others see certification as an aid to career advancement.” Consequently, the holder of a certification potentially has more job opportunities than non-certified individuals. Hence, based upon the above statements, obtaining certification may provide intrinsic satisfaction through providing the holder with the feeling of accomplishment, and extrinsic satisfaction by giving the holder a credential that others in the profession do not possess.

While HRCI states its lofty goals for HR certification, there is a noticeable lack of empirical and theoretical academic research on the certification construct. Aguinis et al. (2005)

analyzed 1873 internet job postings and found that HR certification was preferred for positions requiring more experience, for the positions of HR Director and HR Generalist, and for HR positions in the manufacturing and food service industries. Carolyn Wiley published a series of articles on HR certification in the 1990s (Wiley, 1992, 1995, 1999), yet the propositions raised in her work were never developed with more research into the 2000s, even as certifications become increasingly popular. She surveyed 500 certified HR practitioners and found that the majority of respondents became certified for personal accomplishment (Wiley, 1992). This conclusion is contrary to Wiley's (1992) stated purpose of certifications: restricting the labor supply and preventing marginal workers from identifying with a particular profession. Wiley (1995; 1999) published two additional descriptive studies, one which described several HR certifications in the U.S., and one which compared HR certifications in the U.S. to HR certifications in Canada and the U.K. The accounts are very thorough, and they provide a springboard for the current study; however any conclusion in the aforementioned studies should be looked at cautiously, due to the fact that the results reported were the result of cross-tabulated data and thus did not use statistical techniques that isolate stronger explanatory influences.

There were a few notable studies that conducted "field-based" experiments on certifications. Cegielski et al.(2003) studied end users of an intranet and found no association with satisfaction when the network was administered by a certified system administrator vis-à-vis one who was not certified, thus giving credence to the notion that certification is more symbolic than substantive. Robson et al. (1996) analyzed turnover in Big 5 Accounting positions before and after obtaining the CPA designation. The study found that in the turnover-prone environment of Big 5 accounting, the turnover numbers decreased in the year prior to taking the CPA exam, then spiked quickly after taking the exam (Robson et al., 1996). These results

indicate that those employed in these firms saw value in the credential, thus they remained in a work environment that was less than optimal until obtaining the CPA designation. This seems to indicate the powerful effect that certification can have on individuals' behavior.

Problem Statement

Hence, HRCI makes quite lofty conclusions regarding certification in HR, but empirical support for these conclusions is rather scarce. There are only a handful of studies that look into certification in any profession, and the majority of them are anecdotal and descriptive, rather than systematic and hypothesis-testing. Yet, despite the gap in research, certification numbers are growing larger and without a clear explanation (e.g. PHRs). While behavior towards credentials is linked to organizational outcomes (Robson et al. 1996), no researcher has looked at constructs such as behavior or motivation towards voluntary certifications. Thus, the effect of such constructs on certification needs to be reconciled with the increase in individuals seeking certification. Therefore, I contend that certifications acquired and used primarily for internal or "autonomous" reasons, vis-à-vis certifications acquired for external reasons, are more likely to attain their official purposes and resist being deployed as mere symbols.

The objectives of this study are twofold. First, I intend to provide evidence to show that the motivation to obtain certifications can be reliably measured on dimensions of controlled (i.e. forced) through autonomous. Secondly, I intend to show that these dimensions are associated with organizational outcome variables (e.g. competence and commitment). To accomplish this proposed thesis, I intend to quantitatively survey HR practitioners across the U.S. The study is limited to the U.S. because HRCI's certifications are exclusive to the United States. This method is proposed in order to extend behavioral certification research past descriptive and into more rigorous methodology.

Theoretical Framework

To describe the role of autonomous motivation I will use “Self-Determination Theory” (SDT) as it has been developed by Edward Deci, Richard Ryan, and others (Baumeister & Leary, 1995; Deci, Eghrari, Patrick, & Leone, 1994; Deci & Ryan, 1985a, 1985b, 2000; Gagne & Deci, 2005) (Vansteenkiste, Deci, Sheldon, Simons, & Lens, 2004; Vansteenkiste et al., 2007). SDT is useful here for three reasons. First, it incorporates a range of theories regarding the role of internal and intrinsic motivations in the workplace (see Sachau, 2007). Self-determination theory is a macro-theory that addresses the notion of a motivation continuum of external to internal through 4 sub-theories: Cognitive Evaluation Theory (CET), Organismic Integration Theory (OIT), Causality Orientations Theory, and Basic Needs Theory (Deci et al., 1985b). CET looks at the specific conditions that promote, rather than prevent, intrinsic motivation (Deci et al., 1985b). OIT looks at the factors that allow individuals to experience self-directed versus controlled motivation towards an activity that is not inherently intrinsically motivating (Deci et al., 1985b). Causality Orientations Theory looks at the individual differences that causes people to be motivated internally rather than externally (Deci et al., 1985b). Finally, Basic Needs Theory characterizes the psychological needs necessary (autonomy, competence, and relatedness) for the attainment of maximum personal growth (e.g. Ryan & Connell, 1989). Taken together, SDT is a psychological theory that looks at factors which can optimize individuals’ full potential.

Secondly, it is supported by much empirical research in various disciplines (Deci, Koestner, & Ryan, 1999). SDT researchers found positive outcomes in areas such as learning (e.g. Fernet, Guay, & Senecal, 2004), well-being (e.g. Baard, Deci, & Ryan, 2004), and

performance (Gagne et al., 2005) are more associated with internal rather than external motivation.

Third, it gives a more sophisticated analysis of the various types of motivation likely to be present among those seeking or using HR certifications. While it is valuable to determine the antecedents of “intrinsic” motivation in organizations, there is still the likelihood that much of organizational life will include activities that are not inherently intrinsically rewarding (Gagne et al., 2005). While pay and other extrinsic motivators can give individuals an incentive to perform such activities, based on SDT, such incentives alone do not allow individuals to be self-determined towards such a task (Deci et al., 2000). Because of that notion, SDT is valuable for determining whether extrinsic motivation in organizations has any positive forms or any positive outcomes (Deci et al., 1985b).

In regards to actions that are extrinsically driven, individuals can be completely unwilling to act, they can comply against their will, or they can be actively self motivated (Deci et al., 1985b). SDT states that one’s motivation to act rests on this continuum of controlled to autonomous (Gagne et al., 2005). At the far end of controlled is external motivation (“I must act because that person says so,” “I must obtain certification because my boss wants me to have it”). The range of behaviors becomes more self-determined as the individual moves towards intrinsic motivation on the continuum. Introjected motivation (“I’ll feel bad if I don’t act,” “I will feel inferior without a certification”), is more self-determined than external, but it is still controlled. The person is driven by feelings of guilt instead of by another individual. Identified motivation (“I’m doing this because it is important,” “I seek certification because the knowledge will benefit my career”) represents more self-determined behavior than either of the controlled forms of motivation. It is a much more autonomous form of extrinsic motivation. Those who are driven

because they see the value of doing an act, even if that act is not enjoyable or rewarding, exhibit identified motivation.

There are two important points to note here. First, although type of motivation is presented as a continuum, the person does not necessarily pass through these levels in stages (Deci et al., 1985b). An individual may initially perform an activity out of the fear of feeling guilty, or a person may initially perform such a behavior out of a self-guided motive to help (Deci et al., 1985b, 2000). Second, autonomous extrinsic motivation would be of great value to organizational life. While it is utopian to think that individuals can strive to be intrinsically motivated towards all aspects of one's job, it is more realistic to accept that there are undesirable parts of most jobs and that pressures exist (financial, family, etc.) that can force individuals to stay in a position that is not their ultimate choice.

With that in mind, it would be valuable to not just look at intrinsic motivation in this study, but to also identify how people can be self-driven to optimally perform even the mundane aspects of a job, since monetary incentives will not always be possible. Since self-determined external motivation vis-à-vis controlled external motivation leads to more positive outcomes (Koestner, Losier, Vallerand, & Carducci, 1996), when thinking about the motivation to obtain HR certification, more self-determined motivation would lead to more positive outcomes than feeling compelled to certify from external pressures. It is also important to note that HR certification involves learning new knowledge, and support exists for the notion that either more autonomous extrinsic motivation or more intrinsic motivation leads to better learning, especially conceptual learning (Koestner et al., 1996). However, the HR certification process is not solely individualized conceptual learning and application – with the PHR/SPHR/GPHR exams involving much factual memorization for a 225 question objective exam, it is more practical

when approaching this study, to propose that positive outcomes will result from not just intrinsic motivation to certify, but also from autonomous extrinsic motivation to certify.

Certification Defined

When speaking about certification generally, it is defined here in a broad sense to include any type of *voluntary* recognized third-party assessment: professional certification, certification by occupational associations or union apprenticeship programs, proprietary certification, voluntary certifications provided by independent bodies, and certificates from reputable skill training agencies. Mandatory certification is often called “licensing;” licenses are required to perform a profession, while certifications are not required (Wiley, 1995). The term “credential” is often used in the literature as a more general category that comprises both voluntary and mandatory types (see American Educational Research Association: www.aera.net). In the following discussion, I use the term “certification” to refer to formal third-party skill set testaments whether they are voluntary or required.

Scope and Limitations of Study

In this study, data will be collected only from HR practitioners since HR practitioners are the targets for HRCI’s certifications. It will be assumed that all individuals are aware of HR certification, and that some will have already achieved it, some will have achieved it, but let it lapse (recertification is needed after 3 years), and some will not possess it. Certification possession is not needed for this study since it is assumed that some individuals who are not certified are currently seeking it.

There are some limitations of note. Individuals interested in a career change into HR may be interested in HR certification, and individuals that transferred out of HR may possess HR certification. For data collection purposes, these individuals are harder to survey en masse, thus

this study will only focus on HR practitioners. Secondly, there are numerous voluntary certifications available today. While this study will begin to develop the certification construct, it will only focus on one particular certification. The results from this study may be generalizable for other certifications, but future research will be needed to validate the results found here.

Summary

While empirical certification studies can be found, there is a noticeable lacuna in the literature in terms of theoretical development around the construct of certification. Using SDT as a framework, it is more likely that one who seeks certification for their own benefit would be truly interested in the credential and the knowledge associated with it, as opposed to someone who feels forced to go through with the process. What motivates individuals to seek HR certification? What outcomes can be attributed to such motives? These are some of the questions that will be explored as a model of certification motive is created and testable propositions are generated. In the next chapter, the historical background and current findings for the constructs used in this study will be presented.

CHAPTER 2 LITERATURE REVIEW

There are only a handful of studies that look into certification in any profession, and the majority of them are anecdotal and descriptive, rather than systematic and inferential (Carson & Bedeian, 1994). Yet, despite the gap in research, certification numbers are growing larger (e.g. PHRs). While behavior towards credentials is linked to organizational outcomes (Robson et al. 1996), no researcher has look at behavior and motivation towards voluntary certifications. Thus, behavior towards certification needs to be reconciled with the increase in individuals seeking certification. Therefore, I contend that certifications acquired and used primarily for internal or "autonomous" reasons are more likely to attain their official purposes and resist being deployed as mere symbols vis-à-vis certifications acquired for external reasons.

In this chapter, I will first review research that is relevant to the certification construct. Secondly, I will review relevant research pertaining to self-determined motivation. SDT has been tested across several disciplines (e.g. education, organizations, health care, sport & exercise, parenting, and mental health); certification is powerful for SDT research because it cuts across the disciplines of work organizations and education. Finally, I will review the research on occupational commitment and synthesize the reviewed literature into a testable model.

Summary of Literature Search

The goal of this literature search is to provide support for the thesis of this proposed study. The construct of "certification" is relatively new to academic research. In searching through past articles in peer-reviewed journals and in scholarly books, I found work that touches upon what could be considered "certification." Yet, that research has not been integrated together into one construct. Hence, integrating that work will be the first step in this literature review. Next, I searched peer-reviewed journals for articles pertaining to SDT and for articles

pertaining to occupational commitment. Preference was given to research published in the last 5 years, but older research is also provided where needed.

Certification

Functions of Certification

“Being Good”

Certifications can contribute to organizational performance in a variety of ways (Hale, 2000). An effective certification system decreases the transaction costs of selecting and placing workers (Wiley, 1992; Williamson, 1981). Certificates are "signals" (Aguinis et al., 2005; Spence, 1973) that quickly and efficiently communicate information about a worker's skills to potential users, thus reducing risks associated with the transaction. Certifications can provide greater breadth of information than the typical job application or interview. They often (at least partially) replace the need for costly selection and assessment processes such as multiple interviews, lengthy examinations, assessment centers, or probation periods. The need to identify employee competencies can spur the codification of what is currently only tacit knowledge (Nonaka, 1994). This can help standardize skill-sets, making them more transferable from one setting to another and improving the deployment of human resources (Zeitz, Blau, & Fertig, In Press). Certifications can increase person-job fit by enabling organizations to acquire and allocate employees appropriate for a position (Chatman, 1989). Widespread certification contributes to more effective outsourcing by making it possible to identify competent external suppliers (Wiley, 1995, p. 283). It can enhance workforce development by focusing both internal and external training programs on well-recognized skill sets that have demonstrable relationships to performance (Wiley, 1995, p. 283).

Certifications can also contribute to employee development. They provide specific but challenging goals that motivate workers to learn new job skills (Pierson, Frolick, & Chen, 2001;

Ryan et al., 1989). The presence of a well-accepted certification system for a job can increase incentive to invest in human capital, since the certification gives the worker competitive advantage in labor markets (Kleiner, 2006). Certification assessments give the worker useful feedback about important work-related knowledge and skills. The achievement of passing a certification exam and acquiring the associated skills may enhance personal self-esteem and psychological well-being (Ryan & Deci, 2000). Successful completion of a certification process can change self-identity. The worker may feel more like a “professional” and be more inclined to approach tasks in a problem-solving way. Possessing a certificate can promote appropriate job placement in the "free agent" knowledge economy (Brown & Hesketh, 2004; Pink, 2001). Robson, et al. (1996) found that in Big Five accounting firms, turnover spiked after taking the CPA exam, suggesting that it was useful in acquiring jobs in other organizations. The sense of having greater employability can reduce the stress normally caused by job insecurity (Ashford, Lee, & Bobko, 1989; Gillespie, Walsh, Winefield, Dua, & Stough, 2001; Pollard, 2001), allowing more energy to be focused on job performance.

The process of acquiring a certificate can foster knowledge of and identification with the relevant occupational community (Livingood et al., 2001; Parker, Arthur, & Inkson, 2004; Wiley, 1995). Membership in that community may provide access to new work-related ideas. The certifying body and approved training institutions can be on-going sources of information and assistance in job performance (Pierson et al., 2001). Research has found that capabilities can deteriorate rapidly when not used (Argote, Beckman, & Epple, 1990), and the ability to update knowledge and skills from an outside source can be crucial to remaining current. Microsoft offers a proprietary certification (Microsoft Certified Professional; www.microsoft.com) and along with it access to technical and product information, invitations to Microsoft conferences

and training sessions, and subscription to a career and professional development magazine (Pierson et al., 2001). Academic degrees give access to academic and collegial professional networks (e.g. Academy of Management; www.aomonline.org) that can be drawn on for work-related information.

Thus, a certification system can foster employee development and enhance organizational performance in a variety of ways. Certifications can be valid indicators of competence and good predictors of performance. But they have a dark side as well.

“Looking Good”

Certifications can be used for extrinsic reasons that have little or nothing to do with improved employee competence or work performance. This proposition is consistent with three theoretical perspectives, all of which have received much empirical support: neo-institutionalism in organization studies, impression management theory, and the “credentialism” literature in education studies.

Neo-institutionalism

“Neo-institutionalism” (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Scott, 1995) maintains that structural forms and organization practices are often adopted merely to enhance legitimacy, and may have little or no relationship to real performance. In their classic article, DiMaggio & Powell (1983) outline three different external pressures for organizations to adopt practices, none of which is directly related to improved work processes. “Mimetic isomorphism” involves imitating the practices of large and successful organizations, even when they may not be appropriate to one's own situation. “Coercive isomorphism” means adopting practices or structures because of the superior power of regulators or dominant organizations. “Normative isomorphism” entails conforming to the norms engendered in occupational training schools,

whether or not they are suited to the current situation. Practices are adopted in ways that provide maximum display to external stakeholders, but may have little or no relationship to genuine performance (e.g. King, Lenox, & Terlaak, 2005). In Meyer and Rowan's (1977) term, they become "decoupled" from work processes. Institutional theory implies that organizations will require certifications not because of their demonstrated role in improving work performance, but as symbols of legitimacy to external stakeholders. This proposition has been supported regarding ISO 9000 certification (Guler, Guillen, & Macpherson, 2002; Renuka & Venkateshwara, 2006), ISO 14001 certification (King et al., 2005), and HR certification (Greenwood, Suddaby, & Hinings, 2002).

Impression Management

Impression management is a person's attempt to influence the image that others have of him or her (Elsbach & Sutton, 1992; Rosenfeld, Giacalone, & Riordan, 1995). Jones and Pittman (1982) describe five tactics designed to give favorable impressions, none of which is inherently performance related: ingratiation (seeking to be viewed as likeable), exemplification (seeking to be viewed as dedicated), intimidation (seeking to appear dangerous and threatening), self-promotion (seeking to be viewed as competent), and supplication (seeking to be viewed as in need of assistance). Three of these are applicable to skill-set certifications. A worker may acquire a certification merely to display dedication, which is shown by the amount of money and effort required to complete the sometimes lengthy certification process (*exemplification*). In political conflicts an employee might brandish his credential to push his ideas and derogate those of other parties - "I have such-and-such certification, thus I am more qualified than you to make this decision" (*intimidation*). Individuals can pursue certification merely to be viewed as competent, even if there is little commitment to using the skills indicated by the certificate (*self-*

promotion). Impression management theorists do not claim that use of these tactics necessarily implies lack of real resources and capabilities (Leary & Kowalski, 1990; Zerbe & Paulhus, 1987). However, research findings do suggest a tendency to promote appearances in order to achieve one's ends, whether or not there is genuine substance behind the appearances (Varma, Toh, & Pichler, 2006; Weiss & Feldman, 2006; Wright, Holloway, & Roloff, 2007). Bolino (1999) argues that "organizational citizenship behaviors" may be adopted merely to look good and thus acquire the rewards accruing to a "good citizen." He suggests that OCBs performed for this reason will have a weaker effect on organizational effectiveness than OCBs adopted for intrinsic reasons.

Credentialing

The "credentialing" literature proposes that formal education is often used to enhance prestige, power, status, or pay. This contrasts with its commonly accepted "official" goal, which is to impart genuine information, cognitive skills, and values relevant to such things as job performance, personal enlightenment, and improved citizenship (Berg, 1971; Brown, 1995). Collins's (1977) influential work, *The Credential Society*, held that educational credentials have become more important to career advancement than curriculum content. Labaree (1997) furthered this theme, stating that formal education has come to serve as a "private consumer good – a mechanism for getting ahead or preserving existing advantage" (p. 2). As a result education is valued more for its formal characteristics such as "grades, credits, and degrees" than for its contributions to society such as "producing citizens who are politically responsible and workers who are economically productive." In an analysis similar to the one advanced in the present paper, he argues that emphasis on the extrinsic benefits of education has destroyed students' intrinsic motivation, which is "derived from the process of learning itself" (Labaree,

1997, p. 251). This thesis is endorsed by Pfeffer and Fong (2002; 2004) in their wide-ranging critique of business education. They maintain that the American-style business degree has become a credential sought largely because of its acceptance and legitimacy within the business community. It provides value to students by giving access to networks, and to organizations by serving as a screening device. But it provides little or no actual content that improves managerial practice. The overriding emphasis on extrinsic outcomes (higher salary, more prestige) produces an instrumental and cynical attitude among students, leading them to cut corners and even cheat (Pfeffer & Fong, 2004, p. 1509). This erodes the intrinsic functions of business education, namely helping to improve product quality, meeting customer needs, and fostering “critical consideration of business, business practices, and their effects on people and society” (Pfeffer & Fong, 2004, p. 1503).

Certification as Symbol

There is evidence that skill-set certifications are used in ways proposed by these theories. Organizations require employee certifications to establish legitimacy with external stakeholders (DiMaggio & Powell, 1983). The number and type of certifications within an organization enhance external reputation for quality or innovation. Many organizations face coercive pressures from the environment: they must have certified staff in order to perform a line of work, especially where public safety is involved. The presence of appropriately certified workers may be necessary to obtain an organizational certification, for instance, those related to quality such as ISO 9000. Business school faculties must contain a threshold proportion of faculty holding doctoral degrees in order to obtain certification from the Association to Advance Collegiate Schools of Business (AACSB: www.aacsb.edu), even though it is not well-established that research-oriented PhDs do a better job of imparting managerial skills to students than would

experienced professionals (Gioia & Corley, 2002, p. 111). Employees use certification to gain greater status and rewards. Weeden (2002) found that “licensing, credentialing, [and] certification” tended to create “closure” around an occupation and increase the average earnings of its members (Kleiner, 2006).

Thus, all three research streams offer theoretical and empirical support for the notion that certifications can be used primarily or exclusively for “looking good,” and may not contribute to genuine employee development and job performance. As Gioia and Corley (2002) note in their analysis of business school rankings, “spending scarce resources for image-related features, rather than substantive program enhancements,” is having the unfortunate effect of turning schools away from the “pursuit of knowledge to the pursuit of resources” (p. 109). Furthermore, over-emphasis on “credentials” can lead to their inflation and eventual devaluation in the marketplace (Collins, 2007). Lack of attention to their official purposes may render them less accurate signals of relevant skills. Ultimately they may lose their credibility and become unattractive to employers (Aguinis et al., 2005; Wiley, 1995).

Effective Certification

An effective certification system requires (a) identifying the kinds of knowledge, skills and abilities relevant to work performance (Livingood & Auld, 2001), (b) measuring these KSAs accurately (Akhter, 2001; Naquin & Wilson, 2002; Raymond, 2001) (c) providing training and experience needed to build the relevant competencies (Holton III, Bates, & Ruona, 2001), (d) assuring that certified KSAs are actually applied to work activities (Yamnill & McLean, 2001) (e) and maintaining transparency and communication among stakeholders (workers, employers, occupational associations, consumers, and the certifying agent)(www.noca.org). Doing all these things well is problematic (Burns, 1985; Hale, 2000; Hamm, 1999; Kane, 2004; Naquin et al.,

2002). Certification testing is crucial and yet consensus seems to be that assessing validity is difficult (Raymond, 2001; Sackett, Schmitt, Ellingson, & Kabin, 2001). In an analysis of six different occupations, Torraco (1999) concluded that the skills needed for successful job performance were often context-specific and/or distributed among a whole team of workers. This would make them difficult to identify and measure in a certification examination. Certification tests are usually based on job analysis (or “practice analysis”), but there seems to be little consensus on which methods are best (Raymond, 2001). A variety of testing formats are used (Shimberg, 1981), but the most common one, multiple choice, does not seem able to capture professional judgment (Raymond, 2001). Written tests cannot directly measure the unobservable or tacit knowledge usually important to effective practice. Few studies have directly examined the relationship between certification test scores and future job performance (Kane, 1982; Raymond, Neustel, & Anderson, 2007), and those that have been conducted sometimes find little relationship (Cegielski et al. , 2003; Livingood & Auld, 2001; Wiley, 1995). Kleiner (2006) reviews studies on occupational licensing and reports positive effects on service quality in some cases but little or none in others. Indeed, researchers have concluded that certification tests cannot be held to the standard of predictive validity – that the test predicts effective future job performance (Kane, 1982, 2004; Shimberg, 1981). Instead, only content validity is seen as relevant (La Duca, 1994; Raymond, 2001) – whether the test taps into the knowledge and skills judged necessary for good practice. Thus existing empirical research on employee certifications gives minimal support to the proposition that they are valid indicators of “being good.” I suggest that this is known or guessed by relevant stakeholders and can contribute to their being used primarily for “looking good.”

Importance of Internal Motivation

Given the difficulties involved in identifying and assessing relevant competencies, I suggest that stakeholders are likely to be aware of the difficulties and that extrinsic motivation for certification may become prevalent. The thinking will be, “Getting this may not help me do a better job, but it does enable me to obtain this position,” or “This certification doesn’t assure that my employees are competent, but requiring it makes us look better to customers.” But there is a paradox here. Internal motivations may be less common than external motivation, yet because of the potential effect of external motivation on competency, internal motivations may be all the more important. If testing had complete content and predictive validity, it would matter less what motivated the various stakeholders, since certificates would perfectly signal relevant competencies. Given that this is most likely not the case (Aguinis et al., 2005; Livingood & Auld, 2001), it is all the more crucial for participants in the system to fill in the gaps and help make the system work as intended. Certifying bodies must strive continually to determine relevant standards and valid assessment procedures, and not be content to see their procedures as a kind of “initiation ritual” which requires effort and weeds out some applicant, but is little related to actual job performance. This will require considerable effort to monitor work process and provide opportunities for involvement and feedback, especially when jobs are complex and dynamic (Torraco, 1999). Occupational associations can be tempted to support high certification hurdles even if minimally related to work performance since a high hurdle will restrict labor supply and enhance the financial position of members. But to be consistent with their official purposes, the associations must retain strong internal commitment to creating a genuine learning community that promotes the development of relevant knowledge and skills among its members. Employing organizations need to monitor how certified skills contribute to work performance

and be ready to give feedback to those providing training and setting standards. Workers will play a central role. When taking certification-related training they should bring up their work experiences and question how the material taught is relevant. They must strive to learn basic principles, and most importantly to learn how to learn from the work situation.

The logic behind these assertions is similar to that used by Ouchi (1980) in his model of “clan” control in organizations. Clan control (rather than market or bureaucracy) is appropriate when it is practically impossible to measure individual worker performance, meaning that performance evaluations and differential rewards cannot be effective. Instead, one must build a strong and cohesive culture through careful selection and intensive socialization. This inculcates appropriate work standards and helps align member goals and values with those of the organization. Workers then have internal motivations to produce competent work even when extrinsic inducements such as individual pay are not practical due to the inability to measure individual performance accurately. We suggest that certification systems are in a similar position: given difficulties in measuring relevant KSAs, internal motivation and commitment of stakeholders are required to make the certifications effective.

Motivation for Certification

Key to my thesis is that “internal” motivations for certifications can help foster their official purposes, and potentially counter their tendency to be used primarily for extrinsic reasons. That internal motivation can have this effect seems consistent with our understanding of internal motivation for an activity: the person is more concerned with full engagement in the task than with external appearances. There is some empirical support as well (Hodgins & Liebeskind, 2003). Lewis and Neighbors (2005) found that undergraduate research subjects who were more “self-determined” (a key feature of internal motivation) were less likely to say

they would use “self-presentation tactics” in a scenario described by the researchers. Drory and Zaidman (2007) studied the use of impression management practices in “organic” versus “bureaucratic” organizations. Organic organizations are less hierarchical and typically more concerned to develop strong intrinsic work motivations in their members. This study of 208 employees of military and R&D organizations found that members of the mechanistic organization (the Military) were more likely to use impression management tactics, and these were aimed primarily at supervisors. In contrast, members of organic organizations (R&D) were less likely to use impression management, and these were directed equally at supervisors and colleagues.

To describe the role of internal motivation I will use “Self-Determination Theory” (SDT) as it has been developed by Edward Deci, Richard Ryan, and others (Baumeister & Leary, 1995; Deci & Ryan, 1985, 2000; Deci, et al., 1994; Gagne & Deci, 2005; Vansteenkiste, Deci, Sheldon, Simons, & Lens, 2004; Vansteenkiste et al., 2007). SDT is useful here for three reasons. First, it incorporates a range of theories regarding the role of internal and intrinsic motivations in the workplace (see Sachau, 2007). Second, it is supported by much empirical research (for a review, see Deci & Ryan 1985, Deci et al. 1999). Third, it provides a detailed analysis of the various types of motivation likely to be present among those seeking or using employee skill-set certifications.

Consistent with SDT, I define *internal* motivation as occurring when the reasons for acting have been significantly internalized by the actor. Internal motivation includes both “intrinsic” and “extrinsic” varieties. This classification gives credence to what is likely to be a common motivational stance within the certification process: actors are driven in large part by the desire for extrinsic rewards (higher pay, greater status, promotion, etc.), but at the same time

they may agree in large part with the reasons for having the certification. That is, their basic motivation is extrinsic but also significantly internalized. A predominantly external motivation (“external regulation”) means seeking certification only because it can bring rewards, while believing that it is almost completely irrelevant to job performance. “Introjected regulation” represents a step toward internalization but is still predominantly controlled by external factors. A person having this motivation will want to *appear* “valuable, genuine, hardworking, and interested” but not necessarily want to have these characteristics themselves (Lewis & Neighbors, 2005, p. 471). A worker with introjected extrinsic motivation for certification may say: “I will seem inferior to my colleagues if I don’t get this certification.” “Identified regulation” is more internalized still. This includes behaviors that are personally important but not fully integrated with other aspects of the self. A manager with identified extrinsic motivation for certification may require it of workers not because she knows it to be a valid predictor of performance, but because it is used in other organizations that seem to be successful. “Integrated regulation” is the most internal or autonomous form of extrinsic motivation because the action is experienced as fully coherent with personal goals and values. A worker with integrated extrinsic motivation for certification may not only seek it in order to obtain a promotion (extrinsic inducement), but also accept that it will build competencies felt to be important to his/her work performance and career development (integration with goals and values). Intrinsic motivation is the most internalized type: the perception that an activity is inherently stimulating and energizing to perform.

Intrinsic Motivation

Ryan and Deci (2000) describe intrinsic motivation as “the inherent tendency to seek out novelty and challenges, to extend and exercise one’s capacities, to explore, and to learn” (p. 70).

That intrinsic motivation can be a powerful force in the workplace has been argued by a number of writers (Deming, 1986; Herzberg, 1966; Herzberg, Mausner, & Snyderman, 1959; McGregor, 1960; Veblen, 1922). Research indicates that it produces a variety of benefits: more involvement with an activity, better task performance, greater task persistence, higher satisfaction, and a sense of personal well-being (Baard et al., 2004; Deci et al., 1985b; Lynch Jr., Plant, & Ryan, 2005; Utman, 1997) It is especially important for tasks “requiring creativity, cognitive flexibility and conceptual understanding” (Gagne & Deci, 2005, p. 337).

SDT Motivations and Certification

Intrinsic motivation involves viewing preparation, training, assessment, and application activities as interesting and challenging. It is associated with task enjoyment (Ryan & Connell, 1989) and successful performance of activities that are inherently interesting and challenging, usually those involving some degree of complexity and creativity (Koestner & Losier, 2002). But commitment may fail if boring and irritating tasks are encountered. Autonomous extrinsic motivations generate greater effort and better completion of tasks that are not inherently stimulating (Gagne & Deci, 2005; Ryan & Connell, 1989). The person does not expect the activity to be interesting, but stays the course because he or she endorses the reasons supporting it. Autonomous extrinsic motivations may be crucial for completing certification processes, which can be demanding and may contain portions that do not initially appear relevant to one’s job (Wiley, 1992). For example, becoming an Oracle Database Administrator Certified Master (www.oracle.com) involves a series of intensive exams and training courses. Obtaining the Professional in Human Resources (PHR) certification (www.hrci.org) requires a lengthy, intensive conceptual exam (over 200 questions in 4 hours). Internal motivation, whether

extrinsic or intrinsic, seems especially valuable for training associated with certification examinations.

Internal Motivations for Certification Training

Internal motivation has been associated with more engagement in the learning process and with greater amounts of learning (Deci et al., 1985b; Ryan & Deci, 2000; Vansteenkiste et al., 2004). Internal motivation for training should enhance readiness to apply new knowledge and skills to work activities – what has been referred to as “training transfer” in the training literature (Burke & Hutchins, 2007; Cheng & Ho, 2001; Holton III et al., 2001; Yamnill et al., 2001). In their comprehensive review of the training transfer literature, Burke and Hutchins (2007) report that successful application of training to the work context is enhanced by intrinsic motivation. Cheng and Ho (2001) concluded that training transfer was improved by intrinsic motivations, and that such motivation was higher in work environments (which they call “continuous-learning cultures”) where there were opportunities and encouragement for applying what was learned to the job. Fecteau, Dobbins, Russell, Ladd, and Kudisch (1995) looked at the impact of eleven possible factors on “pretraining motivation” of a sample of managers and supervisors. By far the strongest determinant was “intrinsic incentives,” as indicated by the following survey item: [I take training] “because it provides me with skills that allow me to be more effective on the job.” In contrast, extrinsic incentives had almost no effect on motivation. The strength of motivation had a strong positive effect on perceived training transfer, as measured by this item: [The] “productivity of subordinates improved due to the skills” that were learned (Fecteau et al., 1995, p. 9). Holton and colleagues (2001, p. 344) found that workers are more likely to learn and to apply their knowledge if they are internally motivated, being “excited ... when I think about trying to use my new learning on the job.” Internal motivations also lead

to higher quality learning, including greater conceptual understanding and knowledge of basic principles (Grolnick & Ryan, 1989; Ryan et al., 2000). This is especially important for applying certified KSAs to work activities, since problems encountered may often not fit precisely into established procedures but must be solved using basic principles. Deeper learning seems most appropriate for what Yamnill and McLean (2001) call “far transfer,” i.e., application to situations dissimilar to those encountered in training. “Principles theory” suggests that “training should focus on the general principles necessary to learn a task so that learners can apply them to solve problems in the transfer environment”(Yamnill & McLean, 2001, p. 201).

Other Effects of Internal Motivation

Internal motivation has also been linked to acceptance of change (Gagne, Koestner, & Zuckerman, 2000; Kirkpatrick, 1985). This is important in the certification process because information, procedures, and principles often need to be updated (Raymond, 2001). Those who approach certification for internalized reasons should be more willing to apply what they have learned to ever changing circumstances. This will increase what Miner and Mezias (1996) call “generative learning” and help to extend and extend the employee’s knowledge and skills. Furthermore, internal motivations are associated with greater trust of management (Deci & Ryan, 1985), and trust has been identified as a key ingredient of organizational learning (Yeo, 2005). Internally motivated activities generate positive emotional outcomes such as satisfaction and a sense of well-being (Brunstein, Schultheiss, & Grassman, 1998; Deci et al., 2000; Sanderson & Cantor, 1997; Shirom, Westman, & Melamed, 1999). Satisfaction associated with certification preparation and assessment should increase commitment to the process, making the employee more motivated to choose higher levels of certification if this offered, more willing to be recertified, and more likely to offer constructive feedback to the certifying agency.

Internal motivation can also be theoretically linked to affective occupational commitment – an emotional attachment to a particular occupation (Meyer, Allen, & Smith, 1993). Occupational commitment is of interest to certification research since one way to evaluate the worth of a certification is by assessing how serious one is towards the occupation for which the certification applies. Additionally, affective occupational commitment has been linked to participating in professional activities (Snape & Redman, 2003), keeping up with new occupational developments (Meyer, Srinivas, Lal, & Topolnytsky, 2007), finishing complex tasks (Goswami, Mathew, & Chadha, 2007), and pursuing professional development (Blau, 2003) – all of which have ties to the notion of certification. Similarly, personal initiative, defined as “work behavior characterized by its self starting nature, its proactive approach, and by being persistent in overcoming difficulties that arise in the pursuit of a goal,” (Deci, Connell, & Ryan, 1989; Frese & Fay, 2001; Lynch Jr. et al., 2005) (and similar to the autonomy that fosters internal motivation) has shown to explain variance in occupational commitment. Hence, a self-determined individual seeking certification for personal development, rather than from external pressures is likely to have more of an emotional stake in the associated occupation. If the true goal of a certification truly is “being good,” it would be detrimental for those obtaining a certain certification to exit the occupation shortly after.

Enhancing Internal Motivation

Interpersonal Context

SDT writers have suggested that internal motivations can be enhanced by the appropriate “interpersonal context” in which activities are presented (Deci et al., 1989; Lynch Jr. et al., 2005; Richer & Vallerand, 1995; Senecal, Vallerand, & Guay, 2001). SDT writers are adamant about what to *avoid* – closely tying differential individual rewards (especially monetary one) to level of

measured task performance. A stream of research has shown that extrinsic rewards tend to decrease intrinsic motivation (Deci, et al., 1999). SDT outlines a variety of ways to present even extrinsically motivated activities in ways that enhance internalization by participants. Key is supporting a person's needs for autonomy and competence while performing the activity. Three autonomy-supportive behaviors have been identified (Deci et al., 1994; Gagne & Deci, 2005; Richer & Vallerand, 1995). First, one needs to provide a meaningful rationale for the activity. This involves explaining why the task is important, whom it may help, what values it promotes, etc. The worker will then understand and even accept why the task should be done, rather than just "giving in" to the orders of the supervisor. Second, one should provide as much choice as possible. For instance, a person can be given choice of different tasks, alternative ways of carrying them out, or when to do them. Third, it is important to acknowledge a person's feelings about the activity and give opportunities for feedback. Having one's perspective understood apparently helps reduce the sense that the task is externally imposed. Deci et al. (1989) give a brief vignette of autonomy-supportive behavior: "It involves the manager listening, acknowledging feelings, providing feedback if appropriate, and encouraging the subordinates to decide how to handle problems" (p. 583). This contrasts with a highly controlling approach: "The manager prescribes a solution, with no inputs from the subordinate, and uses sanctions such as rewards or punishments to ensure that the solution is used" (Deci et al., 1989, p. 583). Deci et al. (1989) have shown that managers can be trained to perform these behaviors.

Finally, the person's sense of competency must be reinforced (Burke & Hutchins, 2007; Gagne & Deci, 2005). This can be done through providing information feedback for successful actions. SDT research has found that extrinsic rewards tend to reduce autonomous motivation, but can indirectly enhance it if they are predominantly "informational" rather than "controlling"

(Deci et al., 1999; Ryan, Mims, & Koestner, 1983). Hence, positive verbal feedback supports internal motivation if it sticks to commenting on the quality of the work accomplished; it can reduce internal motivation if it is controlling.

Summary

Employee skill-set certifications are likely to increase in prevalence and importance as workers become more mobile and as organizations increasingly recruit from distant locations and rely on services from little-known providers. Third-party certifications provide a convenient and relatively inexpensive way to estimate the nature and quality of competencies. However as the utility of certifications increase, so may the tendency to deploy them as symbols to gain prestige, power and rewards. Dealing with this will be an ongoing challenge for those wishing to maintain the integrity and effectiveness of certification systems. To be sure, many technical and institutional factors are involved in certification systems, as has been developed by many authors (Hale, 2000; Raymond, 2001). Greater internal motivation among all parties can enhance the intended purposes of certifications and keep in check the tendency to use them merely for their symbolic value. In the next chapter, the methodology for the study will be presented.

CHAPTER 3 MODEL AND HYPOTHESES

As detailed in Chapter 1, the objectives of this study are twofold: reliably measuring motivation to certify on dimensions of controlled through autonomous and providing evidence to show that these dimensions impact perceived competence and occupational commitment. In this chapter, the study model and hypotheses are offered. The model used in this study is presented in Figure 1¹.

Hypotheses

Measurement of Certification Motivation

Key to my thesis is that “internal” motivations for certifications can help foster their official purposes, and potentially counter their tendency to be used primarily for extrinsic reasons. Regardless of if certification is used to “be good” or “look good” it must be appropriately and reliably measured on a scale from autonomous to controlled. Ryan and Connell (1989) were the first researchers to use these dimensions. They used them in their study of SDT-based student learning motivation, and it has since been adapted for other domains such as health behaviors (Williams et al. 1996). The scale contains dimensions for controlled motivation (external and introjected), autonomous motivation (identified and intrinsic) and amotivation. The current study aims to extend these dimensions into the realm of Human Resource Development (i.e. motivation to certify).

Hypothesis 1. *Motivation to certify can be measured on five distinct dimensions of external, introjected, identified, intrinsic, and amotivation.*

¹ Figure 1 is located in the Appendix.

Certification

Is autonomous motivation to certify associated with a greater instance of actually certifying? Koestner et al. (1996) found that the different dimensions proposed in OIT are associated with different behaviors during an election: more intrinsic and identified motivation lead to more information seeking, but only identified motivation lead to more actual voting. These researchers' results may provide support for certification studies. An individual who possesses identified motivation to certify can be hypothesized to certify more often than an individual who is intrinsically motivated to certify. As Koestner et al.'s (1996) results indicated, both forms of motivation were associated with seeking additional information about a potentially desirable action, but those possessing identified motivation were more likely to act. In terms of HR certification, the PHR/SHPR/GPHR is a lengthy exam (over 200 questions in 4 hours), and it requires a degree of dedication to pursue. It is possible that someone intrinsically motivated to certify would not choose to continue with the process if it is determined that there is no intrinsic value to the certification (or process), whereas a person who possesses identified motivation to certify will continue on even if there is no intrinsic value since this individual sees the value in the outcome, even if the process is not completely desirable.

Hypothesis 2. *More autonomous motivation (identified or intrinsic) to certify will have a more positive association with actually obtaining certification vis-à-vis individuals whose motivation to certify is more controlled (external or introjected) or amotivated; among the dimensions of autonomous motivation, identified motivation will be more positively associated with obtaining certification than intrinsic motivation.*

Occupational Commitment

Occupational commitment looks at commitment to “an identifiable and specific line of work that an individual engages in to earn a living” and “is made up of a constellation of requisite skills, knowledge, and duties that differentiate it from other occupations and, typically, is transferable across settings” (Meyer & Allen, 1991). Based on the overall uncertainty that permeates organizations nowadays, in addition to the reality that individuals voluntarily and involuntarily change jobs multiple times over the course of a career, commitment to the occupation is becoming increasingly valuable as an outcome in organizational research (e.g. Meyer et al., 1993, Blau, 2003). Several constructs that have links with certification such as participating in professional activity participation (Frese & Fay, 2001), keeping up with new occupational developments (Meyer et al., 2007), finishing complex tasks (Goswami et al., 2007), and pursuing professional development (Blau, 2003) have been shown to have an association with occupational commitment. Is Human Resources an occupation – Taking into account the increased relevance of Human Resources (Boxall & Purcell, 2000; Wright, Snell, & Dyer, 2005) along with Lee, Carswell and Allen’s (2000) defining of a occupation as a term than encompasses professionals (Employment Lawyers) and non-professionals (HR Generalists), there is evidence that “Human Resources Practitioner” is an occupation.

Can certification motivation be associated with occupational commitment to HR? According to Meyer & Allen (1991), there are three mindsets that characterize individuals’ commitment. Normative commitment occurs when individuals feel obliged to remain. Continuance commitment occurs when individuals feel commitment due the perception of high costs involved with leaving. Affective occupational commitment occurs due to an emotional attachment (Meyer et al., 1993). Several antecedents of affective commitment have been

identified in past research (Meyer & Allen 1991, 1993), yet the strongest and most consistent relationships occurred in situations when employees' basic needs are met. SDT research identifies autonomy as one of three basic needs that are required for self-determined motivation, and states that need satisfaction is highest when an individual is autonomously motivated (Deci & Ryan, 1985b, Fecteau, Dobbins, Russell, Ladd, & Kudisch, 1995). As mentioned in Chapter 2, personal initiative (an autonomous act) has shown to explain variance in occupational commitment. Hence, building on the idea of basic need satisfaction as an antecedent to affective occupational commitment, individuals that feel in control of their development as HR practitioners (i.e. their basic need of autonomy is accounted for on the job), as opposed to those that feel forced to "jump through hoops", will be more likely to have a stronger emotional attachment to their chosen occupation (i.e. HR).

Hypothesis 3. *More autonomous motivation (identified or intrinsic) to certify will have a more positive association with affective occupational commitment vis-à-vis individuals whose motivation to certify is more controlled (external or introjected) or amotivated.*

Perceived Competence

If Wiley's (1992) assertion holds true, HR Certification should signal a level of competence to others. Spence's (1973) seminal piece on signaling theory based its initial model on that notion of signal strength. In a transaction involving information exchange between a sender and receiver, signals represent information sent by the sending party that the receiving party would not have known otherwise (Spence, 1973). Spence (1973) compared the hiring of individuals to purchasing a lottery, in that the purchaser does not know the true productive capability of the hired individual until later. The strength of a signal sent, in turn, can reduce the potential negative risk associated with such a situation (Spence, 1973). During the job search

process, HR certification preferably acts as a signal to alert hiring organizations that the candidate possesses HR job knowledge that uncertified individuals do not. Such knowledge transmitted through certification can cover much greater breadth than what could be ascertained during the limited time duration of a job interview. Therefore, in order to present a desired level of HR knowledge to others, a person who makes the decision to pursue a career in HR is likely to consider a certification such as the PHR.

Ideally, if HR Certification signals competence, the individual possessing the certification should *actually be competent*. According to SDT-based educational studies (Grolnick et al., 1989; Rigby, Deci, Patrick, & Ryan, 1992; Ryan et al., 1989), those who experience more external pressure to certify will find the process arduous, and these people are more apt to do what it takes to pass, rather than learn. Such a short-term approach can leave these individuals with a piece of paper that is not backed by the desired currency (HR knowledge and competence). If enough individuals follow the aforementioned path, it can produce an “inflated credential.” On the contrary, those who are autonomously motivated to seek HR certification will have internalized the benefits that they feel are associated with the credential; they are more likely to be self-determined to learn the content (Deci & Ryan, 1985b), and *to actually learn* the content (Grolnick et al., 1989; Rigby, Deci, Patrick, & Ryan, 1992; Ryan et al., 1989). Taking into account the possible role of motivation to certify, since HR certification is designed to separate the marginal practitioners from the superior ones (Wiley, 1992), individuals who autonomously sought and acquired the knowledge contained in HR certifications should be more competent in their HR jobs than those who “got the certification to look good” (Gioia & Corley, 2002).

Hypothesis 4. *Motivation to certify moderates the relationship between certification and perceived competence, such that there is a stronger positive association between certification and perceived competence when there is high autonomous motivation to certify vis-à-vis controlled motivation to certify.*

Validity

To test for the concurrent validity of the motivation and commitment measures used in this study, I will test their relationships with known antecedents and outcomes.

Autonomy Support

Managers have the ability to influence subordinates' motivation for knowledge-seeking on the job (Richer et al., 1995). If a manager conveys autonomy support for knowledge seeking, or for career development, this can lead subordinates to autonomously seek out certifications (e.g. PHR) that can provide valuable career knowledge, a professional network, etc. On the contrary, an individual who feels forced to obtain a certification due to pressure from above (e.g. cannot be promoted, cannot perform the job as well), will be more likely to report a controlled rather than autonomous motivation towards the credential. This notion of autonomy support leading to autonomous motivation has empirical support. Richer and Vallerand (1995) tested the effects of supervisors' behavior on subordinates' motivation towards tasks. They found that more autonomy support lead to more intrinsic motivation and more control oriented behavior lead to lower intrinsic motivation. Deci, Connell and Ryan (1989) found that managerial styles can be trained to promote self-determined motivation in subordinates through an intervention.

Hypothesis 5. *Employee perceived manager support for autonomy is more strongly positively associated with autonomous (identified and intrinsic) motivation versus controlled (external and introjected) motivation or amotivation to certify.*

Locus of Causality

Individual differences exist that determine whether one is prone to be self-motivated or motivated by external sources. This distinction was coined “locus of causality” by DeCharms (1968). A person with an external locus of causality is more prone to experience external pressure towards an action, while a person with an internal locus of causality is more prone to possess self motivation towards an action (DeCharms, 1968). Baard et al. (2004) found that those who possess an internal locus of causality were more likely to experience fulfillment of their basic needs for autonomy. It can be proposed that an internal locus of causality would lead individuals to experience more autonomous motivation towards HR certification, and an external locus of causality would lead individuals to experience more controlled motivation towards HR certification.

Hypothesis 6a. *Internal locus of causality will have a stronger positive association with autonomous (identified and intrinsic) motivation versus controlled (external and introjected) motivation or amotivation to certify.”*

Hypothesis 6b. *External locus of causality will have a stronger positive association with controlled (external and introjected) motivation versus autonomous (identified and intrinsic) motivation or amotivation to certify.*

Intention to Quit

Commitment, especially affective commitment, has been related to turnover intent (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). Individuals are more likely to remain in occupations that meet their personal needs (Meyer et al., 1993). Since basic personal need satisfaction is a component of self-determined motivation (Deci et al., 1985b), those who are self-determined to stay in the HR profession are more likely to be self-determined to perform

activities (e.g. certification) that will increase the probability of a successful HR career. Because of the investment required for HR certification, it is less likely that an individual would leave a profession soon after autonomously seeking and acquiring certification. Quitting the HR profession is much more likely to occur if an individual is uninterested in a career in HR, but sought certification for short-term benefit due to coercive pressure.

Hypothesis 7. *Motivation to certify moderates the relationship between occupational commitment and intention to quit, such that there is a stronger negative association between commitment and intention to quit when there is high autonomous motivation to certify vis-à-vis controlled motivation to certify.*

Summary

This concludes the hypotheses in this study. In the next chapter, the methodology is presented.

CHAPTER 4 METHODS

Participants

After piloting the survey, the final version was distributed to three groups – (1) The members of Philadelphia, PA SHRM (2) The members of Lancaster, PA SHRM (3) An at-large sample of HR practitioners across the US. The Society of Human Resource Management Regional Chapters in Philadelphia, PA (“Philly SHRM”: <http://www.phillyshrm.org>) and Lancaster, PA (“LCAHRM”: <http://www.lcahrm.org>) provide professional development and networking for HR practitioners in over 500 companies. The third group of “at-large, non-SHRM affiliated” respondents was accessed through the purchase of Zoomerang TrueSample market research respondents. Zoomerang assures the TrueSample product as a “quality-assured sample.” A sample size of 382 (Philly SHRM = 166, LCAHRM = 45, TrueSample = 171) was obtained from these groups combined. This sample size is appropriate because it allows for a 5:1 ratio of respondents to items in the largest measure (motivation – 25 items).

Procedure

The chosen method of research for this study is a quantitative electronic survey. This modality is chosen for three reasons. First, due to descriptive nature of the majority of past certification studies, it is necessary to perform more rigorous research methods to further develop the certification construct. Secondly, valid instruments for assessing SDT-based motivation already exist in the literature. Thus, this study will utilize those valid instruments for extension into the certification construct. Finally, the electronic nature of the survey will allow the maximum possible response at the lowest possible cost. Since the majority of HR departments

are small, it is crucial to tap the professional organization (SHRM) for access to the largest respondent pool.

The survey was administered via Zoomerang, a leading online survey tool, via the process that follows. To ensure functionality and face validity, a pilot test was initially run with the executive board of the Philadelphia Chapter of the Society of Human Resource Management. The board was asked for feedback, and to report any difficulties with taking the survey. The electronic nature of the survey allows for email distribution to the respondents and for quick, easy coding of data.

Instruments

The instruments used are included in the Appendix of this study. A 6-point response scale was used for all scale items, with 1 representing “strongly disagree” and 6 representing “strongly agree.”

Motivation to Certify

A 20-item measure based on Ryan and Connell (1989) was created to measure the motivation to certify. Ryan and Connell’s (1989) measure was designed for schoolchildren to assess their motivation towards their studies. This measure focused on five dimensions: amotivated, external, introjected, identified, and intrinsic motivation to certify in HR. Sample items include: “I don’t really know” (amotivation), “So that my superiors won’t criticize me” (external), “Because I’ll feel ashamed of myself if I don’t” (introjected), “Because I think it’s important” (identified), “Because I enjoy it” (intrinsic).

Certification

For each designation (PHR, SPHR, GPHR), participants will be asked whether or not they hold it.

Affective Occupational Commitment

6-items based on the affective occupational commitment items from Meyer et al. (1993). Meyer et al.'s (1993) original measure used nurses for the study sample. The items for this survey were modified to target human resource practitioners. A sample item in this measure is: "I am enthusiastic about the human resource profession." To minimize systematic error, all items that were originally reverse-scored in Meyer et al. (1993) are now positively worded (Jackson, Wall, Martin, & Davis, 1993). Meyer et al. (1993) found the coefficient alphas for commitment to range from .73 to .87

Perceived Competence

To assess perceived competence, a 4-item measure developed by Williams and colleagues (Williams & Deci, 1996a; Williams, Freedman, & Deci, 1998) was used and modified to correspond to HR practitioners. A sample item is as follows: "I feel confident in my ability to perform my job." Williams and Deci (1996) found the reliability of this scale to be .80.

Autonomy Support

The 6-item Work Climate Questionnaire (WCQ; Baard et al., 2004) is used to assess individuals' perceptions of managerial autonomy support at work. Baard et al. created the WCQ from two previous measures of autonomy support; these measures measured autonomy support by health care providers (Williams, Grow, Freedman, Ryan, & Deci, 1996b) and medical school (Williams et al., 1996a). The reliabilities of these scales were .92 and .95, respectively (Williams et al., 1996a; Williams et al., 1996b). A sample item is "I feel that my manager provides me choices and options."

Locus of Causality

Deci and Ryan's (1985a) General Causality Orientations Scale (GCOS) will be utilized to assess individual locus of causality. The GCOS contains 12 short "vignette"-style questions (Deci et al., 1985a). For each vignette, there are two statements that require the participants' responses. For each statement, the participants reply with to the extent to which they agree of disagree with the statement, based on the associated vignette. The measure, originally constructed in 1985 has shown a reliability of .75 (Deci et al., 1985a). A sample vignette from this measure is: "You have a job interview several weeks ago. In the mail you received a form letter which states that the position has been filled. It is likely that you might think: " The respondent then replies to the following two statement based on the vignette: (1)It's not what you know, but who you know. (2) Somehow they didn't see my qualifications as matching their needs.

Intent to Quit Occupation

The 5-item measure of intent to quit used in Walsh, Ashford & Hill (1985) is used. A sample item is "I am thinking about quitting my occupation." Walsh et al (1985) found the reliability of this scale to be .90 .

Control Variables

Social Desirability Response Bias

An 11-item shortened version of the Marlow-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) was used. Reynolds (1982) tested several shortened versions of the 33-item scale. The 11-item version had a reliability of .74 and a correlation with the original M-C scale of .91 (Reynolds, 1982). A sample item is "I am always courteous, even to people who are disagreeable."

Trait Self-Determination

To assess overall self-determination, a 10-item measure developed by Sheldon (1995) was used. The scale instructs respondents to read two statements such as “My emotions sometimes seem alien to me” and “My emotions always seem to belong to me” and to determine which one is more agreeable. Sheldon (1995) found the reliability of this scale to range from .86 to .92.

Demographics and Other Information

In addition to the aforementioned scales, the following basic information and demographics were collected: gender (Male/Female), education completed (Less than High School, High School/GED, Associate’s Degree, Bachelor’s Degree, Master's Degree, Doctoral Degree), number and type of certifications held (“Please list any other certifications and length of holding in the space below”), age (under 21, 21-25, 26-40, 41-55, 56-65, 65 or over), and ethnicity (White, African-American, Hispanic, Asian-Pacific Islander, Native American, Other).

Data Analysis

Data will first be analyzed for normality and multicollinearity, and method variance will be minimized, where appropriate. The proposed hypotheses will be tested as follows:

Hypothesis 1. *Motivation to certify can be measured on distinct dimensions of external, introjected, identified, intrinsic, and amotivation.*

The data collected with the motivation to certify scales will first be analyzed via exploratory factor analysis with oblique rotation (due to the expected high intercorrelations between motivation to certify dimensions).

Hypothesis 2. *More autonomous motivation (identified or intrinsic) to certify will have a more positive association with actually obtaining certification vis-à-vis individuals whose motivation to certify is more controlled (external or introjected) or amotivated; among the dimensions of autonomous motivation, identified motivation will be more positively associated with obtaining certification than intrinsic motivation.*

If the desired factor structure holds, a logistic regression will be performed on the yes/no certification variable (for all 3 HR certifications), with the individual motivation to certify components as independent variables. If there is a different factor structure, the motivation to certify dimensions will be used accordingly.

Hypothesis 3. *More autonomous motivation (identified or intrinsic) to certify will have a more positive association with affective occupational commitment vis-à-vis individuals whose motivation to certify is more controlled (external or introjected) or amotivated.*

If the desired factor structure holds, the individual components of motivation to certify will be regressed on occupational commitment via hierarchical regression, with the control variables entered first and the motivation variables second. If there is a different factor structure, the motivation to certify dimensions will be used accordingly.

Hypothesis 4. *Motivation to certify moderates the relationship between certification and perceived competence, such that there is a stronger positive association between certification and perceived competence when there is high autonomous motivation to certify vis-à-vis controlled motivation to certify.*

The motivation to certify dimensions will be regressed on perceived competence individually (along with certification) in addition to transforming the dimensions into a relative autonomy to certify scale using a weighted average method of $-2 \times \text{external} + -1 \times \text{introjected} +$

1*identified + 2*intrinsic. To run this test for the At-large sample, Grolnick et al.'s (1989) formula will be applied within the current factor structure (relative autonomy to certify = - 1*controlled + 1*autonomous). This method is commonly used in SDT motivation research (Grolnick et al., 1989). Once transformed, first the main effect of relative autonomy to certify and certification (for each certification) will be regressed on perceived competence. Next, the interaction of the various motivation to certify components x certification will be regressed on perceived competence.

Hypothesis 5. *Employee perceived manager support for autonomy is more strongly positively associated with autonomous (identified and intrinsic) motivation versus controlled (external and introjected) motivation or amotivation to certify.*

If the desired factor structure holds, managerial autonomy support will be regressed separately on the individual components of motivation to certify via hierarchical regression, with the control variables entered first and the motivation variables second. If there is a different factor structure, the motivation to certify dimensions will be used accordingly.

Hypothesis 6a. *Internal locus of causality will have a stronger positive association with autonomous (identified and intrinsic) motivation versus controlled (external and introjected) motivation or amotivation to certify.”*

If the desired factor structure holds, internal causality orientation from the GCOS will be regressed separately on the individual components of motivation to certify via hierarchical regression, with the control variables entered first and the motivation variables second. If there is a different factor structure, the motivation to certify dimensions will be used accordingly.

Hypothesis 6b. *External locus of causality will have a stronger positive association with controlled (external and introjected) motivation versus autonomous (identified and intrinsic) motivation or amotivation to certify*

If the desired factor structure holds, external causality orientation from the GCOS will be regressed on the individual components of motivation to certify via hierarchical regression, with the control variables entered first and the motivation variables second. If there is a different factor structure, the motivation to certify dimensions will be used accordingly.

Hypothesis 7. *Motivation to certify moderates the relationship between occupational commitment and intention to quit, such that there is a stronger negative association between commitment and intention to quit when there is high autonomous motivation to certify vis-à-vis controlled motivation to certify.*

The motivation to certify dimensions will be regressed on intention to quit occupation individually (along with certification) in addition to transforming the dimensions into a relative autonomy to certify scale using a weighted average method of $-2 \times \text{external} + -1 \times \text{introjected} + 1 \times \text{identified} + 2 \times \text{intrinsic}$ for the SHRM sample. This method is commonly used in SDT motivation research (Grolnick et al., 1989). To run this test for the At-large sample, Grolnick et al.'s (1989) formula will be applied within the current factor structure (relative autonomy to certify = $-1 \times \text{controlled} + 1 \times \text{autonomous}$). Once transformed, first the main effect of relative autonomy to certify and commitment will be regressed on intention to quit occupation. Next, the interaction of various motivation to certify components x commitment will be regressed on perceived competence.

Summary

This concludes the proposed method for assessing the impact of HR certification motivation. In the next chapter, the data collected will be analyzed and the results of the study will be presented.

CHAPTER 5 RESULTS²

Addressing Common Method Bias

Since this study uses same source data for both the independent and dependent variables, common method bias needs to be addressed. The 1-Factor test (Podsakoff et al., 2003) was performed on the data. Survey data was subjected to an unrotated factor analysis, with the first factor implying method bias. The 1-Factor test produced 21 factors with an eigenvalue greater than 1, and the first factor only explained 17% of variance. Based on this analysis, method bias is minimized in this study.

Sample Differences

A one-way analysis of variance on the 3 samples used in this study revealed a significant difference between the SHRM-affiliated and at-large samples for many of the variables. These results, along with descriptive statistics for the entire sample and for the separate samples (SHRM and At-Large) are presented in Tables 1-4. Due to the significant mean differences, the large sample was split into two respective (SHRM, at-large) samples and separate analyses were run for each hypothesis, along with an analysis on the dataset as a whole to show if (any of) the group differences confound results. Each sample was large enough to ensure a 5:1 ratio of respondents to largest scale (25 items).

Hypothesis 1. *Motivation to certify can be measured on distinct dimensions of external, introjected, identified, intrinsic, and amotivation.*

Tables 5–7 detail the breakdown of the exploratory factor analysis. Due to the high intercorrelations between the motivation items (see table 1) a principle components analysis with oblique rotation was performed on the two samples. The factor analysis produced 5 motivation

² All tables are located in the Appendix.

to certify factors for the SHRM sample (external, introjected, identified, intrinsic, amotivation). The At-large sample produced 3 motivation to certify factors: external and introjected, as well as identified and intrinsic collapsed onto distinct factors, along with an amotivation Factor. The combined sample produced 4 motivation to certify factors: external, introjected, autonomous (identified and intrinsic), and amotivation, thus yielding partial support for Hypothesis 1. Due to these results, for the SHRM sample, the hypothesized 5-factor structure was used when individual components were needed. For the At-large sample, 3 factors were used – external and introjected were collapsed into “controlled,” identified and intrinsic were collapsed into “autonomous,” and amotivation was treated separately.

Hypothesis 2. *More autonomous motivation (identified or intrinsic) to certify will have a more positive association with actually obtaining certification vis-à-vis individuals whose motivation to certify is more controlled (external or introjected) or amotivated; among the dimensions of autonomous motivation, identified motivation will be more positively associated with obtaining certification than intrinsic motivation.*

H2 was partially supported through a hierarchical logistical regression performed on the PHR and SPHR variables (Table 8). For the SHRM sample, identified motivation to certify was positively associated with PHR certification (Model 1: $B=.518$, $p<.05$) and amotivation to certify was negatively associated with SPHR certification (Model 2: $B=-.879$, $p<.01$). The combined sample yielded similar results – autonomous motivation to certify was positively associated with PHR certification (Model 5: $B=.646$, $p<.01$) and amotivation to certify was negatively associated with SPHR certification (Model 6: $B=-.337$, $p<.05$). These results are similar to Koestner (1996), which stated that identified motivation is more likely to lead to an action vis-à-vis intrinsic motivation.

Other results did not support Hypothesis 2. Regarding SPHR Certification for the SHRM sample, neither component of autonomous motivation to certify was significant in Model 2; introjected motivation to certify was positively associated with SPHR certification (Model 2: $B=.945$, $p<.01$). For the At-large sample, only controlled motivation to certify was positively associated with PHR certification (Model 3: $B=.819$, $p<.01$). For the combined sample, introjected motivation to certify was positively associated with SPHR certification (Model 6: $B=.554$, $p<.01$). These results infer a different motivation for the more senior designation for SHRM members and for the PHR designation for non-SHRM members.

Hypothesis 3. *More autonomous motivation (identified or intrinsic) to certify will have a more positive association with affective occupational commitment vis-à-vis individuals whose motivation to certify is more controlled (external or introjected) or amotivated.*

The results of a hierarchical linear regression in Table 9 partially supported hypothesis 3. For the SHRM sample, introjected motivation to certify was negatively associated with affective occupational commitment (Model 7: $B=-.183$, $p<.05$). For the At-large sample, autonomous motivation to certify was positively associated with to affective occupational commitment (Model 8: $B=.352$, $p<.01$). For the combined sample, autonomous motivation to certify was positively associated with affective occupational commitment (Model 9: $B=.305$, $p<.01$). However, there was also a positive association between amotivation to certify and affective occupational commitment (Model 9: $B=.096$, $p<.05$). The result for the combined sample is contrary to the proposed hypothesis, yet it can be due to factors other than motivation to certify, or it can be due to confounding effects from the combined sample.

Hypothesis 4. *Motivation to certify moderates the relationship between certification and perceived competence, such that there is a stronger positive association between certification and perceived competence when there is high autonomous motivation to certify vis-à-vis controlled motivation to certify.*

Hypothesis 4 was not supported (Tables 10-18). Individuals with the SPHR within the SHRM sample reported higher levels of perceived job competence (Model 12: $B=.200$, $p<.10$ and Model 23: $B=.468$ $p<.05$). On the contrary, SHRM members with the PHR reported lower levels of competence (Model 10: $B=-.246$, $p<.01$). In breaking down the motivation to certify components, introjected motivation was negatively associated with perceived competence (Model 15 : $B=-.135$ $p<.05$ and Model 20: $B=-.137$ $p<.01$). Neither interaction was significant.

For the At-large sample (Tables 13-15), there was no reported association with perceived competence for certification and relative autonomy to certify. There was a significant positive association between autonomous motivation to certify and perceived competence (Model 29: $B=.211$, $p<.01$ and Model 32: $B=.213$ $p<.01$).

For the combined sample (Tables 16-18), there was a significant interaction between relative autonomy to certify and the PHR (Model 35: $B=-.154$, $p<.05$). The negative coefficient suggests that for those with the PHR, having more autonomous motivation is associated with less reported job competence. This result is contrary to hypothesis 4, and it is evidence for keeping the SHRM and At-large samples apart due to possible confounding results.

Hypothesis 5. *Employee perceived manager support for autonomy is more strongly positively associated with autonomous (identified and intrinsic) motivation versus controlled (external and introjected) motivation or amotivation to certify.*

Hypothesis 5 was not supported (Tables 19–21). There was no observed association between perceived autonomy and motivation to certify. This conclusion was reached when testing the samples apart or combined, and when using a relative autonomy to certify index, or when using each motivation component separately.

Hypothesis 6a. *Internal locus of causality will have a stronger positive association with autonomous (identified and intrinsic) motivation versus controlled (external and introjected) motivation or amotivation to certify.*

Hypothesis 6b. *External locus of causality will have a stronger positive association with controlled (external and introjected) motivation versus autonomous (identified and intrinsic) motivation or amotivation to certify.*

For the SHRM sample, a hierarchical linear regression on the different motivation to certify components partially supported hypotheses 6a and 6b (Table 23 and 24: Models 59-66). An internal causality orientation was negatively associated with introjected motivation to certify (Model 61: $B = -.366$, $p < .10$). An external causality orientation was positively associated with introjected motivation to certify (Model 65: $B = .37$, $p < .01$) and external motivation to certify (Model 66: $B = .19$, $p < .05$).

For the At-large sample, a hierarchical linear regression on the different motivation to certify components partially supported hypotheses 6a and 6b (Table 22: Models 55-58). An external causality orientation was positively associated with controlled motivation to certify (Model 58: $B = .249$, $p < .05$) and an internal causality orientation was positively associated with autonomous motivation to certify (Model 55: $B = .462$, $p < .01$). However, the inverse was found as well, as a positive association was found between an external causality orientation and autonomous motivation to certify (Model 56: $B = .336$, $p < .05$).

The combined sample also provided partial support for hypotheses 6a and 6b (Table 25 and 26: Models 67-72). An internal causality orientation was positively associated with autonomous motivation to certify (Model 69: $B=.468$, $p<.01$). An external causality orientation was positively associated with introjected motivation to certify (Model 71: $B=.338$, $p<.01$) and external motivation to certify (Model 70: $B=.262$, $p<.01$).

Hypothesis 7. *Motivation to certify moderates the relationship between occupational commitment and intention to quit, such that there is a stronger negative association between commitment and intention to quit when there is high autonomous motivation to certify vis-à-vis controlled motivation to certify.*

Hypothesis 7 was not supported (Tables 27-29). For the SHRM sample, the interaction between intrinsic motivation to certify and affective occupational commitment was significant in regard to intention to quit the HR occupation (Model 76: $B=.273$, $p<.01$). For the combined sample, the interaction between autonomous motivation and intention to quit the HR occupation was also significant (Model 83: $B=.152$, $p<.10$). However the results supported the inverse of Hypothesis 7. There were positive associations between intrinsic and autonomous motivation to certify and intention to leave HR for those with higher affective occupational commitment to HR. Similar to Meyer et al.'s (2002) findings, there were also negative associations between affective occupational commitment and intention to quit for all three samples (Model 73: $B=-.679$, $p<.05$; Model 74: $B=-.939$, $p<.01$; Model 76: $B=-.679$, $p<.01$; Model 80: $B=-.904$, $p<.05$; Model 81: $B=-.543$, $p<.05$; Model 82: $B=-.903$, $p<.01$; Model 83: $B=-1.138$, $p<.01$; Model 84: $B=-.569$, $p<.01$).

Summary

A summary of the findings in this chapter is as follows: (1) There were reported differences between the SHRM-affiliated and At-large samples. (2) Motivation to certify can be

measured using a SDT model. (3) Controlled motivation was positively associated with PHR certification for the At-large sample. (4) Identified motivation was positively associated with PHR certification for the SHRM sample. (5) Introjected motivation was positively associated and amotivation was negatively associated with SPHR certification for the SHRM sample. (6) A negative association was found between introjected motivation and affective occupational commitment for the SHRM sample. A positive association was found between autonomous motivation and affective occupational commitment for the At-large sample. (7) For the SHRM sample, the SPHR was positively associated and the PHR and introjected motivation was negatively associated with perceived competence. (8) For the SHRM sample, an internal causality orientation was negatively associated with introjected motivation and an external causality orientation was positively associated with introjected and external motivation. (9) For the At-large sample, both an external and internal causality orientation was associated with autonomous motivation and an external causality orientation was associated with controlled motivation. (10) For the SHRM and combined sample, high commitment to HR with intrinsic and autonomous motivation to certify related positively to intention to quit the HR occupation.

Summary of Hypothesis Tests

Hypothesis	SHRM Results	At-Large Results	Combined Results
H1: <i>Motivation to certify can be measured on distinct dimensions of external, introjected, identified, intrinsic, and amotivation.</i>	5 Factors (External, Introjected, Identified, Intrinsic, Amotivation) See Table 5	3 Factors (Autonomous, Controlled, Amotivation) See Table 6	4 Factors (External Introjected, Autonomous, Amotivation) See Table 7
H2: <i>More autonomous motivation (identified or intrinsic) to certify will have a more positive association with actually obtaining certification vis-à-vis individuals whose motivation to certify is more controlled (external or introjected) or amotivated; among the dimensions of autonomous motivation, identified motivation will be more positively associated with obtaining certification than intrinsic motivation.</i>	Partial Support: <ul style="list-style-type: none"> Identified motivation to certify positively associated with PHR Introjected Motivation to Certify positively associated with SPHR Amotivation to certify negatively associated with SPHR See Table 8, Models 1-2	Not Supported: <ul style="list-style-type: none"> Controlled motivation to certify positively associated with PHR See Table 8, Models 3-4	Partial Support: <ul style="list-style-type: none"> Autonomous motivation to certify positively associated with PHR Introjected Motivation to Certify positively associated with SPHR Amotivation to certify negatively associated with SPHR See Table 8, Models 5-6
H3: <i>More autonomous motivation (identified or intrinsic) to certify will have a more positive association with affective occupational commitment vis-à-vis individuals whose motivation to certify is more controlled (external or introjected) or amotivated.</i>	Partial Support: <ul style="list-style-type: none"> Introjected motivation to certify negatively associated with affective occupational commitment See Table 9, Model 7	Partial Support <ul style="list-style-type: none"> Autonomous and Amotivation to certify positively associated with affective occupational commitment See Table 9, Model 8	Partial Support <ul style="list-style-type: none"> Autonomous and Amotivation to certify positively associated with affective occupational commitment See Table 9, Model 9

<p>H4: <i>Motivation to certify moderates the relationship between certification and perceived competence, such that there is a stronger positive association between certification and perceived competence when there is high autonomous motivation to certify vis-à-vis controlled motivation to certify.</i></p>	<p>Not Supported</p> <ul style="list-style-type: none"> • PHR and introjected motivation to certify negatively associated with perceived competence • SPHR positively associated with perceived competence • No significant interaction <p>See Tables 10-12, Models 10, 12, 15 & 20</p>	<p>Not Supported</p> <ul style="list-style-type: none"> • Autonomous motivation to certify positively associated with perceived competence • No significant interaction <p>See Tables 14 & 15, Models 29 & 32</p>	<p>Not Supported</p> <ul style="list-style-type: none"> • For those with PHR, negative association between autonomous motivation to certify and perceived competence <p>See Table 16, Model 35</p>
<p>H5: <i>Employee perceived manager support for autonomy is more strongly positively associated with autonomous (identified and intrinsic) motivation versus controlled (external and introjected) motivation or amotivation to certify.</i></p>	<p>Not Supported</p> <ul style="list-style-type: none"> • No significant associations <p>See Table 19</p>	<p>Not Supported</p> <ul style="list-style-type: none"> • No significant associations <p>See Table 20</p>	<p>Not Supported</p> <ul style="list-style-type: none"> • No significant associations <p>See Table 21</p>
<p>H6a: <i>Internal locus of causality will have a stronger positive association with autonomous (identified and intrinsic) motivation versus controlled (external and introjected) motivation or amotivation to certify.</i></p>	<p>Partial Support:</p> <ul style="list-style-type: none"> • Negative association between internal causality orientation and introjected motivation to certify <p>See Table 23, Model 61</p>	<p>Partial Support</p> <ul style="list-style-type: none"> • Positive association between internal causality orientation and autonomous motivation to certify <p>See Table 22, Models 55 & 56</p>	<p>Partial Support</p> <ul style="list-style-type: none"> • Positive association between internal causality orientation and autonomous motivation to certify <p>See Table 25, Model 69</p>

<p>H6b: <i>External locus of causality will have a stronger positive association with controlled (external and introjected) motivation versus autonomous (identified and intrinsic) motivation or amotivation to certify.</i></p>	<p>Partial Support</p> <ul style="list-style-type: none"> • Positive association between external causality orientation and introjected and external motivation to certify <p>See Table 24, Models 65 & 66</p>	<p>Partial Support</p> <ul style="list-style-type: none"> • Positive association between external causality orientation and autonomous and controlled motivation to certify <p>See Table 22, Models 56 & 58</p>	<p>Partial Support</p> <ul style="list-style-type: none"> • Positive association between external causality orientation and introjected and external motivation to certify <p>See Table 26, Models 70 & 71</p>
<p>H7: <i>Motivation to certify moderates the relationship between occupational commitment and intention to quit, such that there is a stronger negative association between commitment and intention to quit when there is high autonomous motivation to certify vis-à-vis controlled motivation to certify.</i></p>	<p>Not Supported</p> <ul style="list-style-type: none"> • High affective commitment and intrinsic motivation to certify is associated with a higher intention to quit HR • Negative association between affective commitment and intention to quit HR <p>See Table 27, Models 73, 74 & 76</p>	<p>Not Supported</p> <ul style="list-style-type: none"> • Negative association between affective commitment and intention to quit HR • No significant interaction <p>See Table 28, Model 80</p>	<p>Not Supported</p> <ul style="list-style-type: none"> • High affective commitment and autonomous motivation to certify is associated with a higher intention to quit HR • Negative association between affective commitment and intention to quit HR <p>See Table 29, Models 81-84</p>

CHAPTER 6

SUMMARY, CONCLUSIONS, and RECOMMENDATIONS

This study attempted to reconcile the increase in individuals seeking certifications with their behavior towards those certifications. While the notion of “certification” is alluded to in multiple areas of academic literature (e.g. Aguinis et al., 2005; Akhter, 2001; Cegielski et al., 2003; Wiley, 1992), this study of HR practitioners aimed to be the first to treat certification as a stand-alone construct. Through a sample of two Society of Human Resource Management chapters and one at-large sample of HR practitioners, this study concluded that motivation to certify can be measured using a self-determination theory model; PHR certification was associated with general autonomous motivation; SPHR certification was associated with controlled, introjected motivation; an association between high occupational commitment and autonomous motivation to certify was observed; and those with the SPHR reported a higher level of competence vis-à-vis those with the PHR. The results show promise for future research directions, yet it is important to note that the conclusions may not be generalizable to different certifications and that the sample did not account for career changers.

In this chapter, I will start by further interpreting the results of the stated hypotheses, while paying attention to the limitations of this study. I will conclude by discussing the implications of this study for both theoretical and practitioner research.

Conclusions

Measuring Certification Motivation

The results of this study supported a clear distinction between an autonomous and controlled motivation to certify. The dichotomy of being good versus looking good not only applies to learning in educational settings (Gioia & Corley, 2002), it also extends to work-based

learning. These results bridged two domains of SDT research – education and work. However, the difficulty in separating intrinsic from autonomous extrinsic motivation and the notion of integrated regulation are fruit for further exploration. Although Deci and Ryan (1985b) included integrated regulation as a dimension of external motivation that represents the “fullest internalization,” it has yet to be included in any empirical research since its conceptualization. Since in this study, an even more fully internalized form of motivation (intrinsic) was not distinctive from identified, it is likely that neither would integrated regulation. Future research should consider whether integrated regulation adds any theoretical value to Self-Determination Theory.

It is also possible that the conceptualization of intrinsic motivation under SDT needs to be revised based on its application in organizational settings. The idea of free choice behavior characterizing intrinsic motivation is difficult to translate to work settings. An extrinsic reward (pay) is always present. No matter how much the notion of compensation is minimized (Rynes, Gerhart, & Minette, 2004), it is difficult to deny the existence. In fact, Hackman and Oldham’s (1980) Job characteristics model uses much of what is termed autonomous extrinsic motivation as intrinsic motivation (Millette & Gagne, 2008). The methodologies used for some SDT studies compound this issue in the sense that not all studies use the external – intrinsic continuum used in the current study. The studies that research the OIT subtheory in organizations use an autonomous/controlled continuum as opposed to deconstructing autonomous motivation into intrinsic and autonomous extrinsic (e.g. Richer et al., 1995; e.g. Roca & Gagne, 2008). To further extend SDT into organizations, future studies should attempt to determine if intrinsic motivation, as defined by SDT, is mutually exclusive from identified motivation.

Certification Behavior

Motivation type was found to affect certification behavior; however the results were mixed for different certifications. Autonomous motivation was found to relate to obtaining the PHR, yet the inverse was true for the more senior designation – the SPHR. One explanation for the difference is found by looking at the career stages of the individuals taking each examination. Individuals seeking PHR certification typically sit for the exam either during the early stages of an HR career, or if they are seeking to enter the HR profession and deem the credential a necessary signal (Spence, 1973). These people see the drive as “upward,” in that, while there will always be some external component to their motivation (methodologically addressed by using the weighted average in regression analysis), they are self-motivated to add the PHR to their expanding portfolio of HR experience. Such experience will enable them to grow within the HR profession. In contrast, considerable HR experience, including strategic decision making, is necessary to sit for the SPHR. The individuals who take the SPHR have already established an HR resume, thus the SPHR is more symbolic than substantive. The pressure to certify for senior HR professionals comes more from below – the pressure to “look good” to others.

Suggestions for Practice

SDT research has shown more autonomous motivation to be linked with algorithmic learning and more controlled motivation to be linked to rote learning (Sheldon, 1995; Vansteenkiste et al., 2004). Hence, if the outcome of symbolism over substance contrasts with the goals of HR certification, HRCI may eventually want to consider a modification in the certification path. The design of the PHR/SPHR/GPHR exams will tend to promote the aforementioned discrepancies due to the lack of a true experience component (other than service

time) for certification. Other international general HR certifications (e.g. Canada and U.K.) require more than simply an objective factual exam (Wiley, 1999). Thus, the model presented in this study may need to be tested cross-culturally to explore its generalizability.

One potential consideration for moving U.S. HR certification beyond simply looking good is for certifying bodies to think about adding a more experiential component to the assessment. This component could be part of the initial certification or part of recertification. To avoid a mass disruption in the signaling process of HR certification when reforming, care must be given to not discount anyone who has already obtained certification. A sensible approach to adding an experiential component to U.S. HR certification would be to keep the existing credentials as is, but add additional levels to each designation (PHR-Bronze, PHR-Silver, PHR-Gold, etc.) that are based on experience and accomplishment.

Certification as a Proxy for Commitment

Is HR certification truly about the knowledge acquired? The positive association between occupational commitment and certification leads to speculation about whether practitioners see the certification as a way to acquire knowledge or as a way to market themselves as HR practitioners. Is it possible that individuals looking to become more marketable as an HR professional or to transition into HR see the PHR/SPHR as tool to signal dedication to the profession? The exam is not one that can be crammed overnight, nor is it one that seasoned practitioners can pass just through calling upon experience. Both the PHR and SPHR contain information similar to the average introductory HR textbooks. Studying requires a large amount of memorizing theoretical, factual, and legal information for a 225 question exam; the likelihood for information drop-off is very high. Yet, even if there is very little

retention, the arduousness of the exam strengthens the signaling capacity (Spence, 1973), as it can possibly be seen as a “rite of passage” into the HR profession.

Certification as a Proxy for Professional Association Membership

While there were some similarities between the SHRM and At-large samples – both provided concurrent validity through the association between locus of causality and motivation to certify (deCharms, 1968; Deci & Ryan, 1985), and both reported a negative association between affective occupational commitment and intention to quit (supporting conclusions reached by Meyer et al., 2002) – there were also differences between the samples worth noting. In addition to the factor analysis and regression results, SHRM respondents reported higher autonomous motivation vis-à-vis the At-large respondents; furthermore, certification numbers were over 5 times greater for SHRM members. Thus, what effect does the professional organization have on the acquisition of the certification? SHRM is the main promoter of the PHR/SPHR; many practitioners misrepresent the PHR/SPHR as a SHRM certification rather than an HRCI certification. What value, if any, does the HR certification add beyond membership in the professional organization? Additionally, if research determines that there is little conceptual retention from the exam, could activity (not just membership) in SHRM predict talent in HR stronger than an exam? Future studies are necessary to explore the significance of HR professional organization membership in relation to the value of HR certification.

Competence

Exploring the relationship of HR certification to competence yielded questions similar to those resulting from the exploration of commitment. If only those with the SPHR saw themselves as more competent, is the resulting perceived competence due to knowledge or experience. Experience in strategic HR roles is a prerequisite for the SPHR exam, and one must

have somewhat of a lengthy tenure within their careers to reach the level of organizational strategic decision-making. Hence, since those who sit for the SPHR possess a longer tenure within the profession and greater experience in strategic HR roles, the effect of experience vis-à-vis knowledge needs further exploration before arriving at a more definitive conclusion about competence.

In addition, due to the nature of the measure used for competence, future studies should assess competence from measures other than same-source, self-report to ensure greater validity. While the measure used in this study was validated by previous SDT research (Williams et al., 1996a; Williams et al., 1998), a competence measure, which at a minimum, contains either certification exam questions, questions designed by supervisors that assess job-specific knowledge, or performance appraisal data, would be more closely related to the notion of HR certification. Thus, while the results from this study show promise for assessing whether HR certification is related to job competence, the aforementioned measures would provide researchers with a clearer picture of competence to base their results.

Additional Research Directions

Motivation towards certification also needs to be assessed longitudinally. As certification's signaling power is reassessed over time, its value for the holder, for the employing organization, and for the certifying body is likely to change. If the number of individuals obtaining a certification increase, however the numbers reflect a portion of individuals who were able to game the certification by strategically passing the exam while retaining little knowledge, the phenomenon of "credential inflation" is likely to occur. In the short-term, someone who behaves favorably towards certification may have very different views down the road. The same holds for those who obtained certification begrudgingly. Additionally,

longitudinal research can include recertification, as many, regardless of the initial drive to certify, see recertification as an arduous task as opposed to further exploration of a body of knowledge.

Methodological Assumptions and Limitations

There are some limitations to note for this study. Based on consultation with SHRM board members, it became known that the chosen method of distribution (email) has yielded about a 10% response rate in past studies. This would amount to 150 members from Philly SHRM (1500 members), and 40 from LCAHRM (400 members). The lower than desirable response rate is attributed to normal inaccuracies of knowing which members are currently active, and the filtering of emails that are “blasted” to members of SHRM listservs. In this case, the number of respondents did fall in line with the chapters’ expectations (166 PhillySHRM, 45 Lancaster SHRM). Therefore, to increase validity, the third sample (TrueSample) was added. Therefore, while the response rate from the chapters was less than desirable by normal research standards, the samples chosen were necessary because of the access to the largest possible group of HR practitioners.

Additionally, the hypotheses tested in this paper are predominantly focused around HR certification. Whetten (1989) suggests setting boundary conditions of theory generalizability (the “who,” “where,” and “when”) to help facilitate model testing. In using Whetten’s (1989) advice, any results from this study may need to be viewed with caution since what holds for one industry’s certifications may not generalize to another industry. Hence, HR certification may be more closely linked to commitment, while IT certification may be more closely linked to competence, or vice versa.

Finally, since the data collected in this study is all single-source, common method variance may be an issue. To address this possible method bias, procedures recommended by Podsakoff and colleagues (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) was utilized. Yet future studies should look into acquiring data using methodology other than self-report, most notably because, while it did not negate significant regressions, social desirability was a significant variable in several of the analyses.

Conclusion

In practice, if skill set certification is the ultimate goal, stakeholders need to consider the ramifications of inflating the value of the credential in questions. However, there are also reasons to look at the positive side of using certifications for symbolic reasons. Education reformists such as Murray (2008) advocate a certification system for higher education as a lower cost option for those not able to afford the rising costs of tuition. Regardless of one's views on the education issue, the time is right to investigate certification as an academic construct. Ideally, the results of this study will act as a springboard for a comprehensive theory of certification that involve all viable stakeholders – namely certification seekers and holders, certifying bodies, and organizations that value the certification.

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APPENDIX

Figure 1:
A Self-Determination Theory Model of Certification Motivation

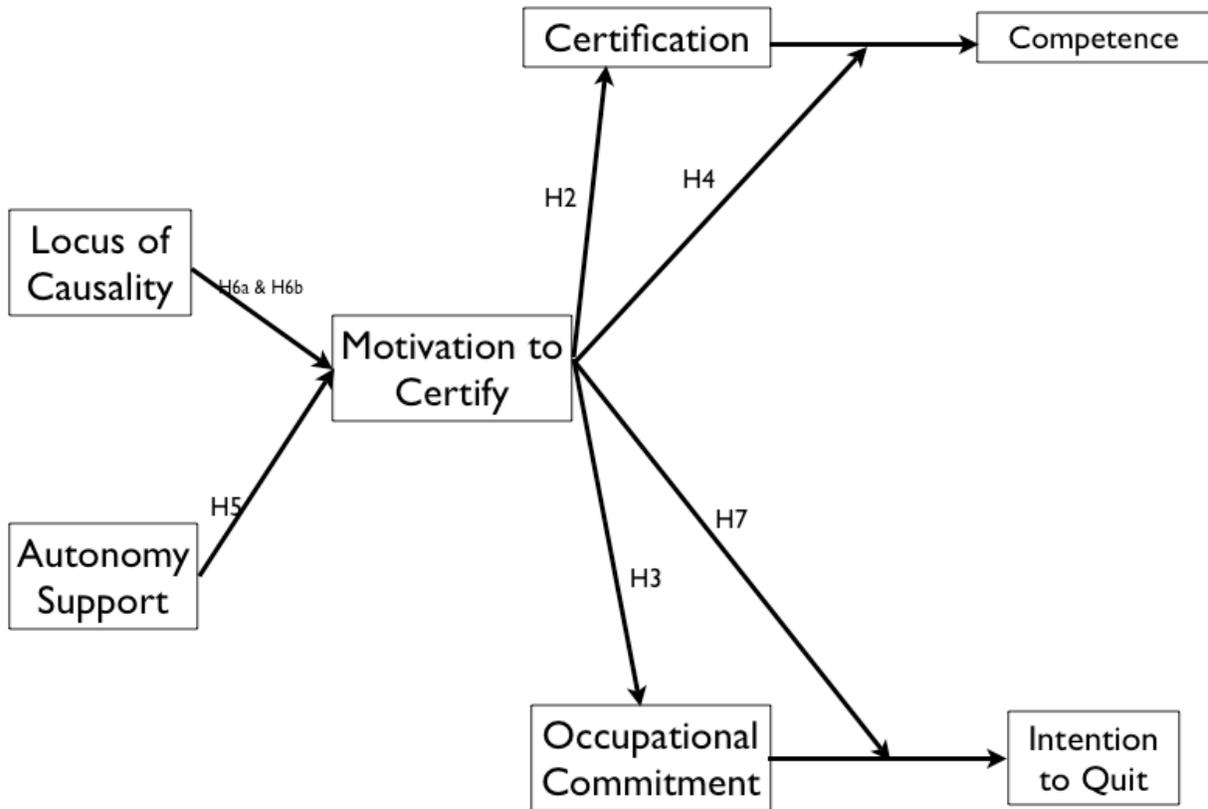


Table 1: Mean Comparison of Study Samples

Variable	Sample	Mean	Variable	Sample	Mean
External Motivation**	SHRM Org. 1	1.39	Perceived Autonomy	SHRM Org. 1	4.59
	SHRM Org. 2	1.35		SHRM Org. 2	4.92
	At-Large	1.89		At-Large	4.36
Introjected Motivation	SHRM Org. 1	1.88	SD Bias	SHRM Org. 1	3.38
	SHRM Org. 2	2.09		SHRM Org. 2	3.39
	At-Large	2.15		At-Large	3.49
Identified Motivation**	SHRM Org. 1	4.13	Trait SD	SHRM Org. 1	2.36
	SHRM Org. 2	4.45		SHRM Org. 2	2.37
	At-Large	3.39		At-Large	2.55
Intrinsic Motivation	SHRM Org. 1	3.26	Controlled Causality Orientation**	SHRM Org. 1	3.49
	SHRM Org. 2	3.78		SHRM Org. 2	3.30
	At-Large	2.95		At-Large	3.73
Amotivation**	SHRM Org. 1	1.98	Autonomous Causality Orientation**	SHRM Org. 1	5.33
	SHRM Org. 2	1.60		SHRM Org. 2	5.23
	At-Large	2.37		At-Large	4.88
Occupational Commitment**	SHRM Org. 1	4.98	PHR Yes/No**	SHRM Org. 1	0.33
	SHRM Org. 2	4.93		SHRM Org. 2	0.47
	At-Large	4.44		At-Large	0.18
Intent to Quit Occupation**	SHRM Org. 1	1.89	SPHR Yes/No**	SHRM Org. 1	0.23
	SHRM Org. 2	1.72		SHRM Org. 2	0.31
	At-Large	2.55		At-Large	0.11
Perceived Competence**	SHRM Org. 1	5.33			
	SHRM Org. 2	5.16			
	At-Large	4.98			

** LSD Post Hoc test revealed a $p < .01$ difference between SHRM and At-Large

^ Sample Count = Philly SHRM = 166, LCAHRM = 45, TrueSample = 171

Table 2: Whole Sample Correlation Matrix

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9
1 PHR	0.27	0.45									
2 SPHR	0.19	0.39	0.022								
3 Gender	1.65	0.48	.111*	-0.058							
4 Age	3.75	1.05	-0.025	0.098	-.170**						
5 Education	3.93	1.01	0.037	.199**	-0.083	.138*					
6 External Motivation to Certify	1.61	0.92	0.045	-0.007	-0.078	-0.038	-.157**	(.902)			
7 Introjected Motivation to Certify	2.02	1.09	0.092	.114*	-0.087	-.151**	-0.093	.723**	(.897)		
8 Identified Motivation to Certify	3.84	1.46	.335**	.173**	.170**	-0.059	0.094	.246**	.444**	(.900)	
9 Intrinsic Motivation to Certify	3.18	1.51	.290**	.112*	0.072	-0.078	0.015	.229**	.436**	.743**	(.899)
10 Amotivation to Certify	2.11	1.34	-.240**	-.151**	-.111*	0.048	-0.032	.261**	.137**	-.345**	-.285**
11 Occupational Commitment	4.73	1.01	.216**	.112*	0.059	.216**	.207**	-0.034	-0.013	.293**	.250**
12 Intent to Quit Occupation	2.17	1.12	-.130*	-0.075	-0.048	-.153**	-.208**	.235**	.121*	-.117*	-.139**
13 Perceived Competence	5.15	0.82	0.043	.117*	0.071	0.107	.139*	-.110*	-0.055	.214**	.175**
14 Perceived Autonomy	4.52	1.19	0.034	.217**	0.055	0.039	.201**	-0.084	-0.006	0.067	0.078
15 Social Desirability	3.43	0.46	-0.068	0.015	-0.057	-.199**	-0.011	0.103	.152**	-0.014	0.053
16 Response Bias Self	2.45	0.83	-0.068	0.02	-.115*	-0.071	-0.092	0.098	0.052	-0.041	-0.102
17 Determination Controlled Causality	3.57	0.68	-0.015	-0.091	0.007	-.221**	-0.096	.231**	.254**	0.064	0.082
18 Orientation Autonomous Causality	5.11	0.68	0.022	0.068	.240**	0.086	.161**	.152**	-0.074	.241**	.139**

* p<0.05

** p<0.01

- parentheses
are
coefficient
alphas

Table 2: Whole Sample Correlation Matrix (cont.)

Variable	10	11	12	13	14	15	16	17	18
1 PHR									
2 SPHR									
3 Gender									
4 Age									
5 Education									
6 External Motivation to Certify									
7 Introjected Motivation to Certify									
8 Identified Motivation to Certify									
9 Intrinsic Motivation to Certify									
10 Amotivation to Certify	(.838)								
11 Occupational Commitment	-0.079	(.900)							
12 Intent to Quit Occupation	.239**	-.415**	(.869)						
13 Perceived Competence	-0.076	.596**	-.291**	(.914)					
14 Perceived Autonomy Social Desirability Response Bias	-0.039	.326**	-.357**	.355**	(.950)				
15 Self Determination Controlled Causality Orientation	.170**	-0.009	.262**	0.04	0.007	(.724)			
16 Autonomous Causality Orientation	.125*	-.300**	.274**	-.269**	-.279**	.154**	(.822)		
17 Autonomous Causality Orientation	.157**	-0.062	.197**	0.069	-0.032	.214**	.154**	(.782)	
18 Autonomous Causality Orientation	-0.063	.376**	-.252**	.499**	.219**	0.075	-.173**	.203**	(.887)

* p<0.05

** p<0.01

- parentheses are coefficient alphas

Table 3: SHRM Sample Correlation Matrix

	Mean	s.d.	1	2	3	4	5	6	7	8	9
1 PHR	0.36	0.48									
2 SPHR	0.25	0.44	-.202**								
3 Gender	1.78	0.41	0.034	-0.093							
4 Age	3.78	0.86	-0.024	0.137	-0.142						
5 Education	4.25	0.80	-0.092	.202**	-0.13	0.038					
6 External Motivation to Certify	1.38	0.73	-0.1	-0.11	0.064	-.231**	-0.096	(.859)			
7 Introjected Motivation to Certify	1.92	1.05	-0.013	0.084	-0.017	-.309**	-0.1	.635**	(.882)		
8 Identified Motivation to Certify	4.44	1.37	.234**	0.052	0.046	-.159*	-.169*	0.125	.321**	(.852)	
9 Intrinsic Motivation to Certify	3.37	1.50	.241**	0.033	-0.01	-0.137	0.116	.178**	.330**	.638**	(.876)
10 Amotivation to Certify	1.90	1.31	-.277**	-.197**	0.027	0.104	0.068	.301**	.148*	-.460**	-.329**
11 Occupational Commitment	4.97	0.80	0.139	0.01	0.004	.203**	-0.009	-0.126	-.221**	0.006	0.024
12 Intent to Quit	1.85	0.93	-0.105	-0.04	0.058	0.021	-0.024	0.142	0.08	0.04	-0.107
13 Perceived Competence	5.29	0.57	-0.11	0.093	0.026	0.051	0.084	-0.12	-.271**	-0.13	-0.057
14 Perceived Autonomy	4.67	1.12	-0.052	.218**	0.021	-0.117	0.123	0.00	-0.011	-0.104	-0.003
15 Social Desirability Response Bias	2.70	0.79	-0.107	0.12	-0.104	-.207**	.175*	.244**	.325**	0.091	0.136
16 Self Determination Controlled Causality	2.37	0.82	-0.045	0.108	-.207**	-0.003	-0.068	0.032	0.034	0.112	0.00
17 Orientation Autonomous Causality	3.44	0.61	0.013	-0.112	0.048	-.251**	0.041	.291**	.303**	0.101	0.103
18 Orientation	5.31	0.39	-0.119	0.037	0.131	.188*	-0.028	-0.097	-.185**	-0.011	-0.068

* p<.05

** p<.01

- parentheses are
coefficient alphas

Table 3: SHRM Sample Correlation Matrix (cont.)

	10	11	12	13	14	15	16	17	18
1 PHR									
2 SPHR									
3 Gender									
4 Age									
5 Education									
6 External Motivation to Certify									
7 Introjected Motivation to Certify									
8 Identified Motivation to Certify									
9 Intrinsic Motivation to Certify									
10 Amotivation to Certify	(.841)								
11 Occupational Commitment	-0.042	(.845)							
12 Intent to Quit Occupation	.166*	-.426**	(.826)						
13 Perceived Competence	0.037	.418**	-.320**	(.831)					
14 Perceived Autonomy Social Desirability Response	-0.026	.192**	-.357**	.262**	(.945)				
15 Bias	0.075	-.252**	.209**	-.314**	-0.05	(.696)			
16 Self Determination Controlled Causality	0.034	-.199**	.152*	-.167*	-.304**	.214**	(.707)		
17 Orientation Autonomous Causality	0.101	-.165*	.191**	-.148*	-0.025	.295**	0.099	(.726)	
18 Orientation	-0.009	.204**	-0.088	.236**	.162*	-.161*	-0.121	-0.063	(.659)

* p<.05

** p<.01

- parentheses are coefficient alphas

Table 4: At-Large Sample Correlation Matrix

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9
1 PHR	0.18	0.38									
2 SPHR	0.11	0.31	.393**								
3 Gender	1.51	0.50	0.073	-0.126							
4 Age	3.72	1.23	-0.043	0.062	-.212**						
5 Education	3.58	1.09	0.016	0.136	-.235**	.192*					
6 External Motivation to Certify	1.89	1.05	.340**	.244**	-0.009	0.054	-0.04	(.915)			
7 Introjected Motivation to Certify	2.15	1.14	.303**	.227**	-0.091	-0.045	-0.032	.810**	(.912)		
8 Identified Motivation to Certify	3.58	1.65	.317**	.219**	0.153	-0.009	0.097	.388**	.516**	(.929)	
9 Intrinsic Motivation to Certify	2.95	1.50	.319**	.189*	0.07	-0.043	0.036	.377**	.602**	.794**	(.928)
10 Amotivation to Certify	2.37	1.33	-0.117	0	-0.138	0.017	0.006	.167*	0.091	-.208**	-.194*
11 Occupational Commitment	4.44	1.14	.219**	.156*	-0.033	.224**	.201*	0.135	.187*	.395**	.393**
12 Intent to Quit Occupation	2.55	1.21	-0.039	-0.021	0.048	-.250**	-.162*	.160*	0.093	-0.095	-0.105
13 Perceived Competence	4.98	1.01	0.099	0.108	0.018	0.127	0.087	-0.032	0.098	.358**	.300**
14 Perceived Autonomy	4.36	1.24	0.087	.187*	0.005	0.137	.192*	-0.075	0.03	0.141	0.129
15 Social Desirability Response Bias	2.97	0.88	-0.059	-0.043	-0.115	-.360**	0.046	-0.039	0.05	-0.101	-0.093
16 Self Determination Controlled Causality	2.55	0.84	-0.047	-0.062	0.012	-0.12	-0.058	0.092	0.046	-0.102	-.179*
17 Orientation Autonomous Causality	3.73	0.73	0.048	0.012	0.084	-.202*	-0.081	0.12	.179*	0.092	0.117
18 Orientation	4.88	0.86	-0.002	0.005	.186*	0.047	0.099	-0.048	0.026	.289**	.213**

* p<.05

** p<.01

- parentheses are
coefficient alphas

Table 4: At-Large Sample Correlation Matrix (cont.)

Variable	10	11	12	13	14	15	16	17	18
1 PHR									
2 SPHR									
3 Gender									
4 Age									
5 Education									
6 External Motivation to Certify									
7 Introjected Motivation to Certify									
8 Identified Motivation to Certify									
9 Intrinsic Motivation to Certify									
10 Amotivation to Certify	(.827)								
11 Occupational Commitment	-0.029	(.921)							
12 Intent to Quit Occupation	.226**	-.326**	(.875)						
13 Perceived Competence	-0.101	.654**	-.219**	(.940)					
14 Perceived Autonomy Social Desirability Response Bias	-0.005	.392**	-.320**	.399**	(.954)				
15 Self Determination Controlled Causality Orientation	0.149	-.205**	.343**	-0.143	-0.074	(.742)			
16 Autonomous Causality Orientation	.185*	-.349**	.338**	-.322**	-.234**	.358**	(.733)		
17 Autonomous Causality Orientation	.153*	0.101	0.103	.260**	0.014	.175*	.169*	(.816)	
18 Orientation	-0.013	.372**	-.212**	.543**	.218**	-0.026	-.175*	.466**	(.927)

* p<.05

** p<.01

- parentheses are coefficient alphas

Table 5: SHRM Factor Analysis

Items	Factor				
	1	2	3	4	5
Introjected 5	0.95	-0.198	0.098	-0.051	-0.036
Introjected 2	0.884	0.049	0.006	-0.175	-0.092
Introjected 3	0.817	0.171	0.122	-0.294	-0.087
Introjected 4	0.752	-0.049	-0.159	0.308	0.123
Introjected 1	0.639	0.014	-0.209	0.434	0.082
Introjected 6	0.488	0.4	0.101	-0.162	0.097
<i>Identified 5</i>	0.45	-0.056	0.4	0.12	0.008
External 1	-0.122	0.965	0.142	-0.106	-0.064
External 5	-0.063	0.934	0.063	-0.028	0.032
External 4	0.003	0.879	-0.118	0.113	-0.081
External 3	0.043	0.782	-0.021	0.073	0.055
External 2	0.307	0.407	-0.222	0.334	0.044
Intrinsic 2	-0.059	0	0.863	0.193	0.083
Intrinsic 1	0.005	0.126	0.853	0.084	0.14
Intrinsic 3	0.007	-0.082	0.708	0.225	-0.111
Identified 2	-0.163	0.038	0.185	0.809	-0.026
Identified 1	-0.005	0.001	0.121	0.782	-0.06
Identified 3	0.023	-0.012	0.228	0.698	0.053
Identified 4	0.091	0.008	0.237	0.477	-0.359
Amotivation 2	-0.067	-0.005	-0.01	0.045	0.976
Amotivation 3	-0.077	-0.005	-0.024	-0.002	0.94
Amotivation 1	0.17	-0.032	0.25	-0.152	0.686
Eigenvalue	7.303	5.059	1.393	1.125	1.11
Cumulative % of Variance	33.195	22.998	6.33	5.522	5.044

Table 6: At-large Factor Analysis

Items	Factor		
	1	2	3
External 5	0.94	-0.12	0.014
External 3	0.921	-0.141	0.024
External 1	0.905	-0.217	0.049
External 4	0.886	-0.105	0.043
Introjected 3	0.821	0.055	-0.015
External 2	0.771	0.08	-0.048
Introjected 2	0.767	0.147	-0.054
Introjected 6	0.747	-0.064	0.128
Introjected 5	0.701	0.24	-0.074
Introjected 4	0.675	0.165	-0.015
Introjected 1	0.6	0.287	0.11
<i>Identified 5</i>	0.518	0.367	-0.156
Identified 2	-0.099	0.994	0.038
Intrinsic 3	-0.055	0.946	0.036
Identified 1	-0.094	0.933	0.034
Identified 3	-0.029	0.902	0.076
Identified 4	-0.015	0.882	-0.055
Intrinsic 2	0.028	0.861	-0.009
Intrinsic 1	0.144	0.735	-0.046
Amotivation 2	-0.012	0.033	0.956
Amotivation 3	-0.026	0.044	0.952
Amotivation 1	0.185	-0.016	0.653
Eigenvalue	10.403	3.822	1.686
Cumulative % of Variance	47.287	17.372	7.663

Table 7: Combined Factor Analysis

Items	Factor			
	1	2	3	4
Identified 2	0.965	0.068	-0.181	0.024
Identified 1	0.911	0.115	-0.173	-0.006
Identified 3	0.908	0.122	-0.146	0.069
Identified 4	0.818	-0.003	-0.012	-0.146
Intrinsic 3	0.809	-0.179	0.168	-0.011
Intrinsic 2	0.755	-0.106	0.196	0.034
Intrinsic 1	0.613	-0.086	0.33	0.056
External 4	0.033	0.928	-0.053	-0.029
External 1	-0.029	0.921	-0.058	-0.017
External 3	-0.006	0.845	0.047	0.012
External 5	-0.037	0.836	0.098	0.011
External 2	0.108	0.635	0.17	-0.044
Introjected 5	0.059	-0.107	0.906	-0.04
Introjected 2	-0.07	0.08	0.849	-0.039
Introjected 3	-0.13	0.168	0.821	-0.025
Introjected 4	0.06	0.066	0.72	0.036
Introjected 6	-0.113	0.329	0.531	0.129
Introjected 1	0.218	0.237	0.456	0.07
<i>Identified 5</i>	0.418	0.021	0.423	-0.067
Amotivation 2	0.035	-0.013	-0.076	0.976
Amotivation 3	-0.001	-0.041	-0.049	0.96
Amotivation 1	-0.047	0.051	0.155	0.632
Eigenvalue	8.471	4.904	1.38	1.022
Cumulative % of Variance	38.506	22.29	6.271	4.645

Table 8: Motivation and Certification

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Gender	0.019	0.398	0.732	-0.282	0.325	-0.049
Age	-0.083	0.693*	-0.15	0.279	-0.098	0.357
Education	-0.078	0.835*	0.124	0.489	0.106	0.674**
Marital Status	0.127	0.229	0.315	-0.248	0.24	0.046
Ethnicity	0.095	-0.662	0.367	0.423	0.125	0.004
SD Bias	-0.273	0.383	-0.139	-0.223	-0.287	0.073
Trait SD	-0.043	0.524	-0.19	-0.369	0.012	0.144
Autonomous Motivation			0.361	0.67	0.646**	0.094
Controlled Motivation			0.819**	0.459		
External Motivation	-0.256	-1.118			0.337	-0.187
Introjected Motivation	-0.253	0.945**			-0.167	0.554*
Identified Motivation	0.518*	-0.375				
Intrinsic Motivation	0.135	-0.127				
Amotivation	-0.327	-0.879**	-0.119	0.45	-0.292	-0.337*
r^2	0.223	0.36	0.308	0.274	0.241	0.177
Dependent Variable	PHR	SPHR	PHR	SPHR	PHR	SPHR
Sample	SHRM	SHRM	At-Large	At-Large	Combined	Combined

* $p < 0.05$

** $p < 0.01$

Table 9: Motivation and Commitment

Variables	Model 7	Model 8	Model 9
Gender	-0.062	0.015	-0.024
Age Range	0.069	0.169*	0.129
Education	-0.007	0.12	0.124
Marit Status	0.111	-0.045	0.016
Ethnicity	-0.057	0.033	-0.008
SD Bias	-0.128	-0.04	-0.15
Trait SD	-0.179*	-0.37**	-0.266
Autonomous Motivation		0.352**	0.305**
Controlled Motivation		-0.096	
External Motivation	-0.009		-0.017
Introjected Motivation	-0.183*		-0.132
Identified Motivation	0.077		
Intrinsic Motivation	0.035		
Amotivation	0.007	0.141*	0.096*
Occupational Commitment			
r^2	0.127	0.283	0.259
Sample	SHRM	At-Large	Combined

* $p < 0.05$

** $p < 0.01$

Table 10: Certification and Competence (Relative Autonomy) – SHRM

Variable	Model 10	Model 11	Model 12	Model 13
Gender	-0.018	-0.022	-0.021	-0.017
Age	-0.013	-0.017	-0.019	-0.015
Education	0.097	0.097	0.082	0.08
Marital Status	0.014	0.017	-0.002	-0.003
Ethnicity	0.039	0.04	0.044	0.045
SD Bias	-0.251**	-0.251**	-0.246**	-0.241**
Trait SD	-0.064	-0.062	-0.072	-0.073
Relative Autonomy	0.016	0.014	0.005	0
PHR	-0.246**	-0.294		
PHR x Relative Autonomy		0.006		
SPHR			0.2^	-0.013
SPHR x Relative Autonomy				0.032
r^2	0.14	0.135	0.118	0.12

Dependent Variable: Perceived Competence

^ p<.10

* p<0.05

** p<0.01

Table 11: Certification and Competence (Individual Motivation Components x PHR) – SHRM

Variable	Model 14	Model 15	Model 16	Model 17	Model 18
Gender	-0.015	-0.037	-0.04	-0.018	-0.017
Age	-0.022	-0.051	-0.023	-0.01	-0.019
Education	0.087	0.07	0.088	0.098	0.092
Marital Status	0.019	0.031	0.029	0.017	0.025
Ethnicity	0.044	0.035	0.049	0.039	0.05
SD Bias	-0.237**	-0.201**	-0.254**	-0.257**	-0.239**
Trait SD	-0.062	-0.066	-0.056	-0.06	-0.056
PHR	-0.133	-0.332	-0.584	-0.237	0.016
External Motivation to Certify	-0.061				
External X PHR	-0.062				
Introjected Motivation to Certify		-0.135*			
Introjected X PHR		0.063			
Identified Motivation to Certify			-0.016		
Identified X PHR			0.078		
Intrinsic Motivation to Certify	0.025			0.025	
Intrinsic X PHR	0.003			0.003	
Amotivation to Certify					0.003
Amotivation X PHR					-0.159
r²	0.129	0.159	0.127	0.127	0.141

Dependent Variable: Perceived Competence

* p<0.05

** p<0.01

Table 12: Certification and Competence (Individual Motivation Components x SPHR) – SHRM

Variable	Model 19	Model 20	Model 21	Model 22	Model 23
Gender	-0.018	-0.033	-0.017	-0.014	-0.05
Age	-0.026	-0.06	-0.026	-0.018	-0.026
Education	0.077	0.05	0.07	0.079	0.064
Marital Status	0.003	0.006	0.006	0	0.001
Ethnicity	0.046	0.037	0.045	0.046	0.05
SD Bias	-0.244**	-0.198**	-0.243**	-0.243**	-0.237**
Trait SD	-0.073	-0.089	-0.072	-0.073	-0.069
SPHR	-0.058	-0.244	-0.379	-0.05	0.468*
External Motivation to Certify	-0.051				
External X SPHR	0.212				
Introjected Motivation to Certify		-0.137**			
Introjected X SPHR		0.112			
Identified Motivation to Certify			-0.045		
Identified X SPHR			0.128		
Intrinsic Motivation to Certify				-0.01	
Intrinsic X SPHR				0.073	
Amotivation to Certify					0.037
Amotivation X SPHR					-0.169
r²	0.129	0.163	0.128	0.117	0.126

Dependent Variable: Perceived Competence

* p<0.05

** p<0.01

Table 13: Certification and Competence (Relative Autonomy) – At-large

Variable	Model 24	Model 25	Model 26	Model 27
Gender	-0.026	-0.034	-0.008	-0.012
Age	0.114	0.111	0.109	0.11
Education	0.005	0.001	0.001	-0.004
Marital Status	-0.127	-0.127	-0.117	-0.117
Ethnicity	-0.031	-0.033	-0.03	-0.031
SD Bias	0.029	0.029	0.026	0.03
Trait SD	-0.259**	-0.264**	-0.258**	-0.263**
Relative Autonomy	0.279**	0.293**	0.279**	0.288**
PHR	0.164	0.297		
PHR x Relative Autonomy		-0.095		
SPHR			0.181	0.321
SPHR x Relative Autonomy				-0.1
r²	0.187	0.183	0.186	0.181

Dependent Variable: Perceived Competence

* p<0.05

** p<0.01

Table 14: Certification and Competence (Individual Motivation Components x PHR) – At-large

Variable	Model 28	Model 29	Model 30
Gender	0.156	0.071	0.166
Age	0.116	0.115	0.126
Education	0.055	0.03	0.057
Marital Status	-0.139	-0.124	-0.158
Ethnicity	0.019	-0.016	0.023
SD Bias	0.014	0.029	0.016
Trait SD	-0.351**	-0.306**	-0.345**
PHR	0.017	-0.462	0.412
Controlled Motivation to Certify	0.023		
Controlled X PHR	0.046		
Autonomous Motivation to Certify	0.211	0.211**	
Autonomous X PHR	0.093	0.093	
Amotivation to Certify	0.036		0.036
Amotivation X PHR	-0.108		-0.108
r²	0.071	0.166	0.073

Dependent Variable: Perceived Competence

* p<0.05

** p<0.01

Table 15: Certification and Competence (Individual Motivation Components x SPHR) – At-large

Variable	Model 31	Model 32	Model 33
Gender	0.169	0.042	0.191
Age	0.111	0.109	0.118
Education	0.053	0.021	0.051
Marital Status	-0.13	-0.121	-0.136
Ethnicity	0.023	-0.022	0.028
SD Bias	0.009	0.024	0.019
Trait SD	-0.347**	-0.304**	-0.354**
SPHR	0.341	0.34	0.584
Controlled Motivation to Certify	0.046		
Controlled X SPHR	-0.067		
Autonomous Motivation to Certify		0.213**	
Autonomous X SPHR		-0.077	
Amotivation to Certify			0.035
Amotivation X SPHR			-0.161
r^2	0.071	0.166	0.074

Dependent Variable: Perceived Competence

* p<0.05

** p<0.01

Table 16: Certification and Competence (Relative Autonomy) – Combined

Variable	Model 34	Model 35	Model 36	Model 37
Gender	0.002	0.006	0	0.001
Age	0.048	0.056	0.045	0.046
Education	0.065	0.063	0.052	0.053
Marital Status	-0.055	-0.068	-0.059	-0.06
Ethnicity	0.018	0.011	0.014	0.016
SD Bias	-0.126*	-0.12	-0.124*	-0.124*
Trait SD	-0.179**	-0.187**	-0.181**	-0.181**
Relative Autonomy	0.163**	0.201**	0.145**	0.141**
PHR	-0.143	0.196		
PHR x Relative Autonomy		-0.154*		
SPHR			0.189	0.121
SPHR x Relative Autonomy				0.034
r^2	0.18	0.19	0.181	0.182

Dependent Variable: Perceived Competence

* p<0.05

** p<0.01

Table 17: Certification and Competence (Individual Motivation Components x PHR) – Combined

Variable	Model 38	Model 39	Model 40	Model 41
Gender	0.076	0.084	0.039	0.082
Age	0.05	0.049	0.057	0.051
Education	0.09	0.1	0.086	0.098
Marital Status	-0.059	-0.058	-0.057	-0.057
Ethnicity	0.03	0.028	0.017	0.032
SD Bias	-0.141**	-0.148**	-0.15**	-0.142*
Trait SD	-0.187*	-0.189**	-0.186**	-0.185**
PHR	-0.212	-0.049	0.076	0.096
External Motivation to Certify	-0.108^			
External X PHR	0.12			
Introjected Motivation to Certify		-0.001		
Introjected X PHR		0.012		
Autonomous Motivation to Certify			0.144**	
Autonomous X PHR			-0.053	
Amotivation to Certify				-0.003
Amotivation X PHR				-0.075
r^2	0.1	0.091	0.144	0.093

Dependent Variable: Perceived Competence

^ p<.10

* p<0.05

** p<0.01

Table 18: Certification and Competence (Individual Motivation Components x SPHR) – Combined

Variable	Model 42	Model 43	Model 44	Model 45
Gender	0.073	0.081	0.034	0.077
Age	0.043	0.042	0.051	0.045
Education	0.073 [^]	0.082	0.075 [^]	0.079 [^]
Marital Status	-0.057	-0.059	-0.058	-0.059
Ethnicity	0.033	0.027	0.016	0.033
SD Bias	-0.143*	-0.146**	-0.146**	-0.143*
Trait SD	-0.188**	-0.195**	-0.183**	-0.193**
SPHR	0.257	-0.226	0.167	0.447*
External Motivation to Certify	-0.071			
External X SPHR	-0.013			
Introjected Motivation to Certify		-0.021		
Introjected X SPHR		0.104		
Autonomous Motivation to Certify			0.115**	
Autonomous X SPHR			0	
Amotivation to Certify				0.012
Amotivation X SPHR				-0.123
r^2	0.108	0.105	0.142	0.107

Dependent Variable: Perceived Competence

[^] p<.10

* p<0.05

** p<0.01

Table 19: Autonomy and Motivation – SHRM

Variables	Model 46	Model 47	Model 48	Model 49
Gender	0.048	-0.106	0.09	-0.128
Age	-0.105	-0.33**	-0.299	-0.184
Education	-0.091	-0.179*	-0.22	-0.221
Marital Status	-0.021	0.095	0.24	0.066
Ethnicity	0.049	-0.089	-0.006	0.066
SD Bias	0.186**	0.385**	0.198	0.268
Trait SD	-0.032	-0.093	0.042	-0.087
Perceived Autonomy	-0.022	-0.061	-0.158	-0.097
r^2	0.077	0.162	0.055	0.004
Dependent Variable	External	Introjected	Identified	Intrinsic

Table 20: Autonomy and Motivation – At-large

Variables	Model 50	Model 51
Gender	-0.149	0.442
Age	-0.003	-0.015
Education	-0.043	0.115
Marital Status	0.024	0.014
Ethnicity	0.05	0.236
SD Bias	-0.031	-0.1
Trait SD	0.118	-0.158
Perceived Autonomy	0.015	0.115
r^2	0.016	0.03
Dependent Variable	Controlled Motivation	Autonomous Motivation

* p<0.05

** p<0.01

Table 21: Autonomy and Motivation – Combined

Variables	Model 52	Model 53	Model 54
Gender	-0.124	-0.208	0.42*
Age	0.01	-0.109	-0.062
Education	-0.129*	-0.1	0.1
Marital Status	0.022	-0.013	-0.001
Ethnicity	0.061	-0.022	0.11
SD Bias	0.094	0.197*	-0.024
Trait SD	0.044	-0.018	-0.053
Perceived Autonomy	-0.037	0.017	0.038
r^2	0.027	0.038	0.015
Dependent Variable	External	Introjected	Autonomous

* $p < 0.05$

** $p < 0.01$

Table 22: Causality Orientation and Motivation – At-large

Variables	Model 55	Model 56	Model 57	Model 58
Gender	0.282	0.451	-0.173	-0.164
Age	-0.024	0.035	-0.005	0.019
Education	0.09	0.144	-0.047	-0.035
Marital Status	0.027	-0.009	0.026	0.031
Ethnicity	0.275	0.242	0.055	0.055
SD Bias	-0.133	-0.11	-0.036	-0.048
Trait SD	-0.107	-0.236	0.125	0.085
Internal Causality Orientation	0.462**		0.066	
External Causality Orientation		0.336*		0.249*
r^2	0.096	0.051	0.018	0.045
Dependent Variable	Autonomous	Autonomous	Controlled	Controlled

* $p < 0.05$

** $p < 0.01$

Table 23: Internal Causality Orientation and Motivation – SHRM

Variables	Model 59	Model 60	Model 61	Model 62
Gender	-0.092	0.104	-0.06	0.065
Age	-0.139	-0.265	-0.282**	-0.087
Education	-0.237	-0.246	-0.189*	-0.095
Marital Status	0.057	0.231	0.087	-0.024
Ethnicity	0.091	0.017	-0.063	0.058
SD Bias	0.26	0.202	0.37**	0.18**
Trait SD	-0.062	0.099	-0.086	-0.03
Internal Causality Orientation	-0.254	-0.017	-0.366^	-0.14
r^2	0.004	0.038	0.177	0.084
Dependent Variable	Intrinsic	Identified	Introjected	External

^ $p < .10$

* $p < 0.05$

** $p < 0.01$

Table 24: External Causality Orientation and Motivation – SHRM

Variables	Model 63	Model 64	Model 65	Model 66
Gender	-0.129	0.085	-0.124	0.038
Age	-0.146	-0.23	-0.272**	-0.077
Education	-0.238	-0.248*	-0.191*	-0.096
Marital Status	0.06	0.23	0.091	-0.023
Ethnicity	0.061	-0.019	-0.125	0.029
SD Bias	0.24	0.142	0.31**	0.147*
Trait SD	-0.054	0.093	-0.079	-0.028
External Causality Orientation	0.152	0.293	0.37**	0.19*
r^2	0.004	0.057	0.207	0.112
Dependent Variable	Intrinsic	Identified	Introjected	External

* $p < 0.05$

** $p < 0.01$

Table 25: Internal Causality Orientation and Motivation – Combined

Variables	Model 67	Model 68	Model 69
Gender	-0.082	-0.2	0.251
Age	0.018	-0.108	-0.094
Education	-0.122*	-0.094	0.055
Marital Status	0.021	-0.017	0.019
Ethnicity	0.061	-0.024	0.12
SD Bias	0.092	0.197*	-0.018
Trait SD	0.045	-0.026	-0.02
Internal Causality Orientation	-0.124	-0.016	0.468**
r^2	0.034	0.038	0.064
Dependent Variable	Intrinsic	Introjected	Autonomous

* $p < 0.05$

** $p < 0.01$

Table 26: External Causality Orientation and Motivation – Combined

Variables	Model 70	Model 71	Model 72
Gender	-0.135	-0.215	0.419*
Age	0.03	-0.081	-0.046
Education	-0.123*	-0.079	0.117
Marital Status	0.033	-0.01	-0.004
Ethnicity	0.051	-0.042	0.097
SD Bias	0.052	0.143	-0.052
Trait SD	0.041	-0.045	-0.077
External Causality Orientation	0.262**	0.338**	0.179
r^2	0.064	0.083	0.021
Dependent Variable	Intrinsic	Introjected	Autonomous

* p<0.05

** p<0.01

Table 27: Motivation x Commitment and Intention to Quit Occupation (SHRM)

Variable	Model 73	Model 74	Model 75	Model 76	Model 77
Gender	0.205	0.191	0.201	0.162	0.187
Age	0.167	0.134	0.15	0.148	0.136
Education	-0.019	-0.043	-0.025	-0.05	-0.046
Marital Status	-0.071	-0.068	-0.078	-0.103	-0.068
Ethnicity	0.003	0.005	0.02	0.04	0.028
SD Bias	0.101	0.149	0.124	0.141	0.119
Trait SD	0.114	0.103	0.106	0.121	0.115
Affective Occupational Commitment	-0.679*	-0.939**	-0.982	-1.503**	-0.405
External Motivation to Certify	0.149				
Commitment X External	0.1				
Introjected Motivation to Certify		-0.112			
Commitment X Introjected		0.189			
Identified Motivation to Certify			-0.035		
Commitment X Identified			0.092		
Intrinsic Motivation to Certify				-0.253**	
Commitment X Intrinsic				0.273**	
Amotivation to Certify					0.102
Commitment X Amotivation					-0.074
r^2	0.116	0.111	0.107	0.159	0.111

Dependent Variable: Intent to Quit Occupation

* p<0.05

** p<0.01

Table 28: Motivation x Commitment and Intention to Quit Occupation (At-Large)

Variable	Model 78	Model 79	Model 80
Gender	0.107	0.111	0.166
Age	-0.076	-0.077	-0.082
Education	-0.122	-0.123	-0.12
Marital Status	0.145	0.146	0.098
Ethnicity	0.167	0.155	0.179*
SD Bias	0.28*	0.282*	0.246*
Trait SD	0.304**	0.287*	0.262*
Affective Occupational Commitment	-0.579	-0.502	-0.904*
Autonomous Motivation to Certify	-0.033		
Commitment X Autonomous	0.02		
Controlled Motivation to Certify		0.152	
Commitment X Controlled		-0.031	
Amotivation to Certify			0.098
Commitment X Amotivation			0.141
r^2	0.231	0.244	0.265

Dependent Variable: Intent to Quit Occupation

* p<0.05

** p<0.01

Table 29: Motivation x Commitment and Intention to Quit Occupation (Combined)

Variable	Model 81	Model 82	Model 83	Model 84
Gender	0.02	0.008	0.049	0.029
Age	-0.011	-0.001	0.002	-0.017
Education	-0.17**	-0.18**	-0.169**	-0.19**
Marital Status	0.077	0.073	0.066	0.057
Ethnicity	0.087	0.099	0.114*	0.108
SD Bias	0.252**	0.266**	0.269**	0.244**
Trait SD	0.186**	0.199**	0.192**	0.179*
Affective Occupational Commitment	-0.543*	-0.903**	-1.138**	-0.569**
External Motivation to Certify	0.221**			
Commitment X External	-0.022			
Introjected Motivation to Certify		-0.042		
Commitment X Introjected		0.154		
Autonomous Motivation to Certify			-0.153**	
Commitment X Autonomous			0.152^	
Amotivation to Certify				0.151*
Commitment X Amotivation				-0.003
r^2	0.25	0.229	0.239	0.252

Dependent Variable: Intent to Quit Occupation

^ p<.10

* p<0.05

** p<0.01

**Figure 2:
Survey Items (Measured on 6-Point Scale)**

Causality Orientations (12 Vignettes)

You have been offered a new position in a company where you have worked for some time. The first question that is likely to come to mind is:

1. Will I make more at this position?
2. I wonder if the new work will be interesting.

You have a school-age daughter. On parents' night the teacher tells you that your daughter is doing poorly and doesn't seem involved in the work. You are likely to:

3. Talk it over with your daughter to understand further what the problem is.
4. Make sure she does the assignments, because she should be working harder.

You had a job interview several weeks ago. In the mail you received a form letter which states that the position has been filled. It is likely that you might think:

5. It's not what you know, but who you know.
6. Somehow they didn't see my qualifications as matching their needs.

You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. You would likely handle this by:

7. Telling the three workers the situation and having them work with you on the schedule.
8. Simply assigning times that each can break to avoid any problems.

A close (same-sex) friend of yours has been moody lately, and a couple of times has become very angry with you over "nothing." You might:

9. Share your observations with him/her and try to find out what is going on for him/her.
10. Tell him/her that you're willing to spend time together if and only if he/she makes more effort to control him/herself.

You have just received the results of a test you took, and you discovered that you did very poorly. Your initial reaction is likely to be:

11. "I wonder how it is I did so poorly," and feel disappointed.
12. "That stupid test doesn't show anything," and feel angry.

You have been invited to a large party where you know very few people. As you look forward to the evening, you would likely expect that:

13. You'll try to fit in with whatever is happening in order to have a good time and not look bad.
14. You'll find some people with whom you can relate.

You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterized as:

15. Take charge: that is, you would make most of the major decisions yourself.
16. Seek participation: get inputs from others

Recently a position opened up at your place of work that could have meant a promotion for you. However, a person you work with was offered the job rather than you. In evaluating the situation, you're likely to think:

17. The other person probably "did the right things" politically to get the job.
18. You would probably take a look at factors in your own performance that led you to be passed over.

You are embarking on a new career. The most important consideration is likely to be:

19. How interested you are in that kind of work.
20. Whether there are good possibilities for advancement

A woman who works for you has generally done an adequate job. However, for the past two weeks her work has not been up to par and she appears to be less actively interested in her work. Your reaction is likely to be:

21. Tell her that her work is below what is expected and that she should start working harder.
22. Ask her about the problem and let her know you are available to help work it out.

Your company has promoted you to a position in a city far from your present location. As you think about the move you would probably:

23. Feel interested in the new challenge and a little nervous at the same time.
24. Feel excited about the higher status and salary that is involved.

Autonomy Support

1. I feel that my manager provides me choices and options.
2. I feel understood by my manager.
3. My manager conveys confidence in my ability to do well at my job.
4. My manager encourages me to ask questions.

5. My manager listens to how I would like to do things.
6. My manager tries to understand how I see things before suggesting a new way to do things.

Motivation to Certify

External

1. Because I'll get reprimanded if I don't.
2. Because that's what I'm supposed to do.
3. So that my superiors won't criticize me.
4. Because that's the rule.
5. So others won't be unhappy at me.

Introjected

1. Because I want superiors to think I'm a good worker.
2. Because I will feel bad about myself if I don't.
3. Because I'll feel ashamed at myself if I don't.
4. Because I want my peers to think I'm smart
5. Because it bothers me if I don't.
6. Because I want people to like me.

Identified

1. Because I want to understand HR.
2. Because I want to learn new things.
3. To find out how much I know about HR.
4. Because I think it's important.
5. Because I wouldn't want to be uncertified.

Intrinsic

1. Because it's fun.
2. Because I enjoy it.
3. Because I like the challenge.

Amotivation

1. I don't really know.
2. I don't see what it does for me.
3. I don't see any outcomes associated with it.

Affective Occupational Commitment

1. My current occupation is important to my self-image.
2. I regret having entered my current occupation.
3. I am proud to be my current occupation.
4. I dislike my current occupation.
5. I do not identify with my current occupation.
6. I am enthusiastic about my current occupation.

Intention to Quit Occupation

1. I am starting to ask my friends/contacts about other occupational possibilities.
2. I am thinking about quitting my occupation.
3. I intend to leave this occupation within the next 6 months.
4. I often look to see if positions in other occupations are open.
5. I am thinking about contacting a recruiter about other occupational possibilities.

Perceived Competence

1. I feel confident in my ability to perform my job
2. I am capable of performing my job
3. I am able to achieve my goals in my job
4. I feel able to meet the challenge of performing well in my job

Social Desirability Response Bias

1. It is sometimes hard for me to go on with my work if I am not encouraged.
2. I sometimes feel resentful when I don't get my way.
3. No matter whom I'm talking to, I'm always a good listener.
4. There have been occasions when I took advantage of someone.
5. I'm always willing to admit it when I make a mistake.
6. I sometimes try to get even rather than forgive and forget.
7. I am always courteous, even to people who are disagreeable.
8. I have never been irked when people expressed ideas very different from my own.
9. There have been times when I was quite jealous of the good fortune of others.
10. I am sometimes irritated by people who ask favors of me.
11. I have never deliberately said something that hurt someone's feelings.

Trait Self-Determination (Differential Scale)

- A. I always feel like I choose the things I do.
B. I sometimes feel that it's not really me choosing the things I do.
- A. I choose to do what I have to do.
B. I do what I have to, but I don't feel like it is really my choice.
- A. I do what I do because it interests me.
B. I do what I do because I have to.
- A. When I accomplish something, I often feel it wasn't really me who did it.
B. When I accomplish something, I always feel it's me who did it.
- A. I am free to do whatever I decide to do.
B. What I do is often not what I'd choose to do.
- A. I feel pretty free to do whatever I choose to.
B. I often do things that I don't choose to do.