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THE IMPACT OF TRAINING AND ITS INTEGRATION IN THE FIRM'S BUSINESS STRATEGIES ON THE FIRM'S COMPETITIVENESS

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A Dissertation
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DISSERTATION APPROVAL

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in the field of Workforce Education and Development

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AN ABSTRACT OF THE DISSERTATION OF

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TITLE: THE IMPACT OF TRAINING AND ITS INTEGRATION IN THE FIRM'S BUSINESS STRATEGIES ON THE FIRM'S COMPETITIVENESS

MAJOR PROFESSORS: Dr. MARCIA ANDERSON and Dr. JENNIFER CALVIN

The problem of the present study was to determine training professionals' perceptions of their awareness of and involvement in the integration of training in the firm's business strategies and the impact of training on the firm's competitiveness. The analysis of data obtained from the online survey of 111 participants who were training professionals employed in small, medium, and large firms across three different industries – service, retailing, and manufacturing – revealed that more than 50% of the participants indicated that they either had some understanding of or understood in depth the integration of training in their firms' business strategies. And more than 50% of the participants reported moderate, high, or very high involvement in the integration of training in their firms' business strategies.

Moreover, the majority of the participants rated the impact of training on measures of their firms' competitiveness moderate, high, or very high. In addition, the participants were most frequently based on their communication with colleagues and management team regarding their perceptual judgment of the impact of training on all measures of their firms' competitiveness.

Furthermore, there was a statistically significant relationship between the participants' firm sizes and the extent to which training contributed to three of the measures of their firms' innovation. Finally, the results indicated a statistically

significant positive relationship, $r_s(98) = .576$, $p < .01$, between training professionals' perceived involvement in the integration of training in their firms' business strategies and the impact of training on their firms' competitiveness.

DEDICATION

I dedicate this dissertation to Ms. KANHNHA SAR (Unknown – 2006) my sixth grade French and math teacher at PY THNOO (now known as SOR HOEU) Secondary School, Battambang Province, Cambodia. This dissertation is also dedicated to Ms. VANNA KUY my fifth grade teacher at SVAY POH Primary School, Battambong Province, Cambodia.

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CHAPTER 1

INTRODUCTION

Background of the Study

The significant presence of globalization, strong spirit of free and open market economy, technological advancement, constantly and rapidly changing market environments, superb physical infrastructure, governmental regulations and deregulations, sophisticated consumer base, changing customer and investor demands, and strong consumer advocacy groups have made rivalry among firms in the United States one of the most intensified competitions among industrialized economies in the world. According to Porter (1998), the firm is competitive when it is able to obtain a competitive advantage over its rivals in a particular industry. Porter asserted that a firm gains a competitive advantage when (a) it is able to generate and sustain profits that are greater then the average for its industry; (b) it manages to deliver the same benefits as its rivals but at a lower cost; and (c) it delivers benefits that exceed those of competing products by differentiating itself in the industry.

Theoretical establishment in business strategy has elevated the role of human resources, both as a business function and as a labor, in creating sustained competitive advantage. The resource-based view of the firm (Barney, 1986, 1991, 1995) proposed that firms could create and obtain sustained competitive advantage by creating value in a fashion that is rare and impossible for rivals to imitate. The resource-based view of the firm argues that conventional sources such as natural resources, technology, economies

of scale, operational and manufacturing designs etc., can be utilized to generate sustained competitive advantage, yet these sources can be easily copied by competitors.

In this case, any sources of sustained competitive advantage that cannot be easily imitated are especially important. The resource-based view of the firm established that people (human resources), a repository of knowledge and skills, can be leveraged to create value in a way that is difficult for competitors to imitate (Barney, 1991). People are the strategic assets meaning "the set of difficult to trade and imitate, scarce, appropriable, and specialized resources and capabilities that bestow the firm's competitive advantage" (Amit & Shoemaker, 1993, p. 36).

Ultimately people, a repository of knowledge and skills, are the most valuable and necessary asset for any firm to compete and generate competitive advantage (Barney & Wright, 1998; Gorman, Nelson, & Glassman, 2004; Lopez-Cabrales, Valle, & Herrero, 2006; Shee & Pathak, 2005; Wright, McMahan, & McWilliams, 1994). Strategically speaking, a firm may have a great strategic plan in place, yet it means nothing if its people lack access to appropriate and relevant knowledge, skills, and attitudes to successfully support or carry out the strategic plan.

Since people are the core driver of successful strategy implementation, it is vital for those, especially top management and executive teams, who plan and formulate strategy to realize that having their employees armed with appropriate knowledge and skills is a key element for successful strategy implementation. Porter (2000) stressed that firms operating in the knowledge-based economy become more and more dependent on the skills and knowledge of their workers.

In particular, training has traditionally been a conventional method utilized by virtually every firm, big and small, to prepare and arm both current and new employees with necessary and relevant knowledge and skills needed to perform day-to-day operational activities that ultimately determine organizational performance, success and competitiveness. Research in strategic human resource management, organizational performance, performance improvement, and organizational competitive advantage has conceptually and empirically linked training to organizational performance and sustained competitive advantage (Akhtar, Ding, & Ge, 2008; Arthur, 1994; Bartel, 1994; Cutcher-Gershenfeld, 1991; Gerhart & Milkovich, 1990; Huselid, 1995; Huselid & Becker, 1996; Ichiniowski, Shaw, & Prennushi, 1997; MacDuffie, 1995; Whitney, 2005; Wright, Gardner & Moynihan, 2003).

For instance, Maurer (2001) concluded that "enhanced employee performance through training has always been recognized as an important means of securing the competitive advantage" (p. 34). Corporations in the U.S. have been investing heavily in employee training. *Training Magazine*'s exclusive analysis of the U.S. training industry (Bersin & Associates, 2008) showed total training expenditures had relatively increased from 51.3 billion U.S. dollars in 2003 to 58.5 billion U.S. dollars in 2007, and although the total training expenditures decreased to 56.2 billion U.S. dollars in 2008 compared to 2007, it was still significantly higher than the average expenditures (at 53.6 billion U.S. dollars) from 2003 to 2007 combined.

In 2004, Convergys Corporation (CVG) conducted a survey with over 300 senior executives in human resources, finance, and operations at U.S. and European companies; the findings suggested that by having a well-trained and flexible workforce, companies

could generate greater revenues; minimize operational costs; and differentiate themselves in the marketplace. Caldeira (2001) asserted that one of the key areas correlated to superior performance was workforce training. Employee training was a key and strategic component for corporations because it had been qualitatively and quantitatively documented and empirically shown to have a positive impact on organizational performance and competitiveness (ASTD, 2003; Bartel, 1994; Hollis, 2002; Ichiniowski, Shaw, & Prennushi, 1997; Loundes, 1999; Lyau & Purcel, 1995; US Department of Education, 2003; Whitney, 2005; Wright, Gardner, & Moynihan, 2003).

Nonetheless, the extent that training is genuinely perceived and valued to be strategically important by the firm's top management is still questionable. Human resources, both as a business function and as a labor, has conventionally been perceived as a cost that can be immediately minimized and a quick means of efficiency gains as evidenced by frequent layoffs of employees in the industry. Because training is one of the human resource functions, its activities and budgets are cut down as a result of employee layoffs. Since labor costs are the single largest operating cost in most organizations (Saratoga Institute, 1994), layoffs of employees have become a major aspect of strategies to restructure operations and slash these costs (Uchitelle & Kleinfield, 1996). The concept of numerator management termed by Hamel and Prahalad (1994) rarely considers human resources as a source of value creation. Barney and Wright (1998) asserted that many organizational decisions indicate "a relative low priority on both the human resources of the firm and the Human Resource department" (p. 31).

In response to opposing arguments of the resource-based view of the firm, Becker and Gerhart (1996) acknowledged the challenge between staffing reductions and

restructurings that require fewer employees but create value in the new structures that are more justified for the firm's unique strategies. The researchers recognized that senior human resources and line managers undermine the role of human resources in improving performance.

Moreover, there is a lack of evidence that HR practices impact the skills and behavior of the employees (Wright, Dunford & Snell, 2001) that are the sources of sustained competitive advantage. Therefore, the researchers encouraged other researchers to further investigate the role of human resources in creating and sustaining organizational performance and competitiveness to "demonstrate to senior human resources (HR) and line managers that their HR systems represent a largely untapped opportunity to improve firm performance" (p. 780).

Purpose of the Study

The purpose of the present study was to contribute to a greater understanding of the strategic role of training and training professionals in firms that are operating and competing in the knowledge-based economy. In particular, the study sought to gain insightful knowledge of training professionals' perceptions of their strategic role and how their job activities contribute to enhancing their firms' competitiveness.

Statement of the Problem

The problem of this study was to determine perceptions of training professionals regarding (a) their awareness of and involvement in the integration of training in the firm's business strategies and (b) the impact of training on the firm's competitiveness. Training, as one of the human resource practices, has been qualitatively and

quantitatively established in literature to have a positive impact on organizational performance and competitiveness; nonetheless, the extent to which training is genuinely perceived and valued to be strategically important by the firm's top management is still questionable.

Research Questions for the Study

To achieve this purpose of the present study, the following research questions were addressed:

Question 1: What is the training professionals' level of perceived awareness of the integration of training in their firms' business strategies?

Question 2: What is the perceived involvement of training professionals regarding the integration of training in their firms' business strategies?

Question 3: What is the perceived (a) impact of training on the competitiveness of training professionals' firms, and (b) on what is the perception based?

Question 4: Is there a relationship between the perceived impact of training on the competitiveness of training professionals' firms and their

a. *Gender*
b. *Age*
c. *Number of years in current firm*
d. *Highest educational level*
e. *Type of firm*
f. *Size of firm*
g. *Firm's engagement in global operations?*

Question 5: Is there a relationship between the items on which training professionals base their perception of the impact of training on their firms' competitiveness and their

a. *Gender*
b. *Age*
c. *Number of years in current firm*
d. *Highest educational level*
e. *Type of firm*
f. *Size of firm*
g. *Firm's engagement in global operations?*

Question 6: Is there a relationship between training professionals' perceived involvement in the integration of training in their firms' business strategies and their perceived impact of training on their firms' competitiveness?

Significance of the Study

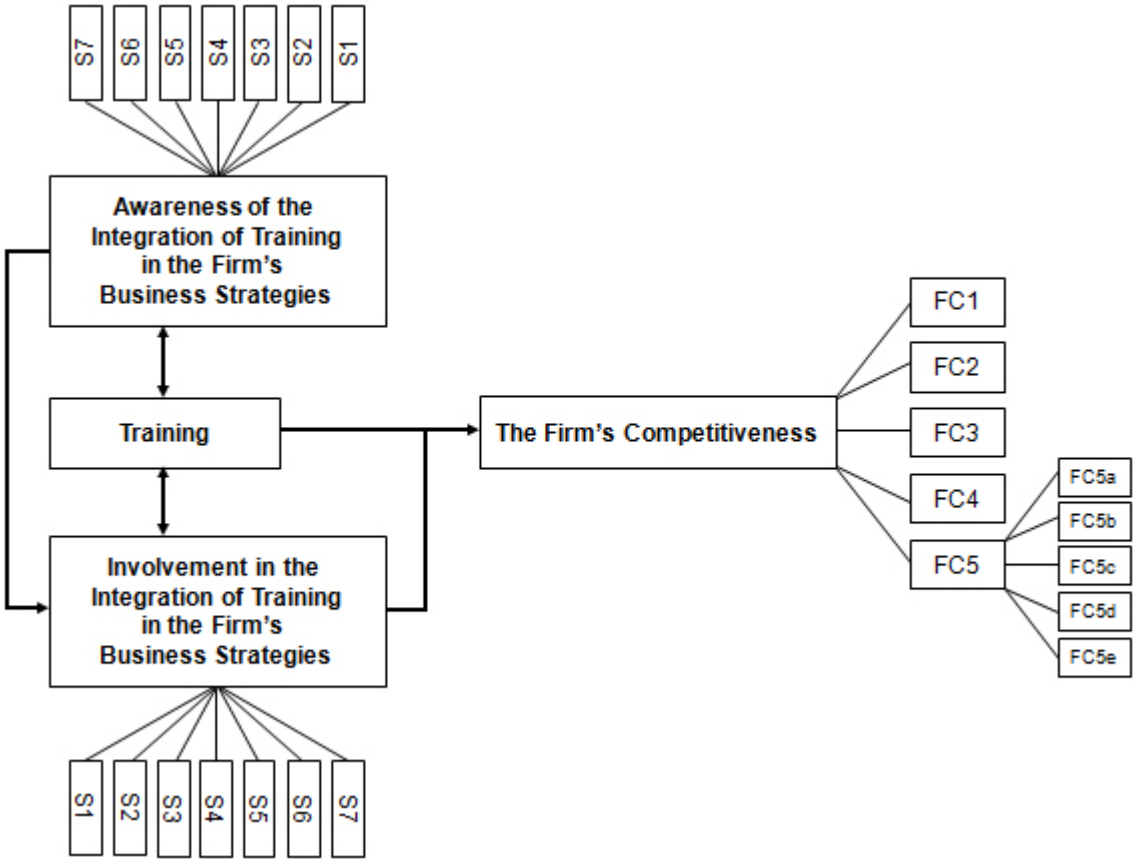
The proposed study presents a few significant attributes contributing to a greater understanding of the strategic role of training and training professionals in firms that are operating and competing in the knowledge-based economy. First of all, the current study is uniquely set up to determine the occurrence of the integration of training in the firm's business strategies through training professionals' awareness of and involvement in such integration. In addition to the determination of the impact of training on measures of the firm's competitiveness, this study was designed to explore relationship between the

impact of training and its integration in the firm's business strategies on the firm's competitiveness, which has never before been reported or documented in the literature.

The research framework of the current study is depicted in Figure 1. All the variables included in the present study are identified based on the review of literature. There are four main groups of variables: "Training", "Training Professionals' Awareness of the Integration of Training in the Firm's Business Strategies", "Training Professionals' Involvement in the Integration of Training in the Firm's Business Strategies," and "the Firm's Competitiveness." Seven business strategies are identified as "the firm's business strategies": "differentiation strategy," "cost leadership strategy," "focus strategy," "market penetration strategy," "product/service development strategy," "market development strategy," and "diversification strategy".

In addition, five "measures of the firm's competitiveness" are identified: "Readiness for new opportunities and threats", "Productivity", "Efficiency", "Differentiation", and "Innovation." The "Innovation" measure of the firm's competitiveness consists of "New Product/Service Design Improvement", "Effective Introduction of New Product/Service to the Market, "Effective Introduction of New Business Processes", "Current Product/Service Improvement" and "Current Business Process Improvement." The next paragraph describes the relationship of the variables.

Training is perceived by training professionals to positively impact measures of their firms' competitiveness. Training professionals' perceptions of the impact of training on their firms' competitiveness is linked to the extent they perceive their involvement in the integration of training in their firms' business strategies. Training professionals' perceptions of their involvement in the integration of training in their firms' business



Note:
S1 = Differentiation Strategy
S2 = Cost Leadership Strategy
S3 = Focus Strategy
S4 = Market Penetration Strategy
S5 = Product/Service Development Strategy
S6 = Market Development Strategy
S7 = Diversification Strategy
FC1 = Readiness for New Opportunities and Threats
FC2 = Productivity
FC3 = Efficiency
FC4 = Differentiation
FC5 = Innovation
FC5a = New Product/service Design Improvement
FC5b = Effective Introduction of New Product/service to the Market
FC5c = Effective Introduction of New Business Processes
FC5d = Current Product/Service Improvement
FC5e = Current Business Process Improvement

Figure 1.1. Research framework of training professionals' perceptions of their awareness of and involvement in the integration of training in the firm's business strategies and the impact of training on the firm's competitiveness.

strategies is linked to their awareness of the integration of training in their firms' business strategies.

However, it was not the objective of this study to make any predictions or identify any causal effects among the variables. In contrast, one of the objectives of the current study was to explore relationships, if there were any, among various variables identified in the research framework.

Limitations of the Study

Causal relationships among the variables or characteristics could not be drawn or established using the survey research method. The results of survey studies only provide a snapshot of the current state or trend. Because this study used a convenience sampling, the results of the study could not be generalized to a greater population since non-probability sampling of the sample does not completely represent the entire population. In addition, the generalizability of the research findings to a greater population cannot be made due a small sample size. Likewise, inferential statistics could not be utilized to analyze ordinal or categorical data. Finally, although the generalizability of the research findings could not be possible; useful and meaning implications could be drawn from the findings.

Delimitations of the Study

The present study only examined training professionals' perceptions of their awareness of and involvement in the integration of training in the firm's business strategies and impact of training on the firm's competitiveness. In respect to business

strategies, there might be other business strategies; however, this study only examined the firm's generic business strategies specified in the research framework (See Figure 1.1).

As for measures of the firm's competitiveness, other factors and variables, not included in the research framework, might explain the firm's overall competitiveness, but this study investigated only the measures, as specified in the research framework, of the firm's competitiveness. These measures of the firm's competitiveness were included because they were known and empirically established in the literature to explain the overall competitiveness of the firm. Finally, the current study was delimited to examination of the perceptions of training professionals (individuals whose jobs are related to training) only.

Definition of Terms

Competitiveness

A firm's competitiveness refers to the competitive advantage over its rivals in a particular industry. Porter emphasized that a firm gains a competitive advantage when (a) it is able to generate and sustain profits that are greater then the average for its industry; (b) it manages to deliver the same benefits as its rivals but at a lower cost; and (c) it delivers benefits that exceed those of competing products by differentiating itself in the industry (Porter, 1998).

Differentiation Strategy

When the firm develops a product or service with unique attributes which are perceived or valued by customers to be better or different from the same products offered

by the rivalry in the industry, the firm is said to employ a differentiation strategy (Porter, 1980).

Cost Leadership Strategy

Cost leadership strategy refers to the extent that the firm operates at low cost in an industry for a given degree/level of quality compared to its rivals (Porter, 1980).

Focus Strategy

The firm employs the focus strategy to concentrate on a narrow market segment; and with that particular segment, the firm attempts to obtain either a cost advantage or differentiation (Porter, 1980).

Market Penetration Strategy

Market penetration is a strategy that the firm employs to obtain growth by using the existing products in its current market segment in order to increase its market share (Ansoff, 1957).

Product Development Strategy

Product development is a strategy for growth which is employed by the firm to develop new products for its existing markets (Ansoff, 1957).

Market Development Strategy

The strategy that the firm uses to achieve growth by targeting its existing products to new markets is called market development (Ansoff, 1957).

Diversification Strategy

When the firm seeks to develop new products for new markets, the firm is said to pursue the diversification strategy (Ansoff, 1957).

Innovation

Innovation is “the application of new ideas to the products, processes or any other aspects of firm’s activities” (Rogers, 1998, p. 5).

Training Professionals

Training professionals are those whose jobs are related to training including, but not limited to, trainers, training specialists, training managers, training administrators, training supervisors, training directors, and training consultants.

CHAPTER 2

LITERATURE REVIEW

Introduction

The problem of this study was to determine perceptions of training professionals regarding (a) their awareness of and involvement in the integration of training in the firm's business strategies and (b) the impact of training on the firm's competitiveness. Training, as one of the human resource practices, has been qualitatively and quantitatively established in literature to have a positive impact on organizational performance and competitiveness; nonetheless, the extent to which training is genuinely perceived and valued to be strategically important by the firm's top management is still questionable.

The literature review found in this Chapter was prepared based on a careful review and analysis of relevant materials obtained from JSTOR, OBSCO, and Google search engine. The key words and phrase entered in the JSTOR and OBSCO databases and Google search engine included the followings: training, organizational development, human resource systems, human resource practices, sustained competitive advantage, performance, competitiveness, business strategy, human resource management, strategic human resource management, and knowledge-based and learning organizations. Furthermore, the materials were reviewed and analyzed for their validity, reliability and relevancy.

For non peer-reviewed materials such as corporate news, magazine articles, organizational report findings, etc., the review and analysis of materials was based on the

following criteria: title, abstract, executive summary, table of contents, year of publication, qualifications and credentials of authors or publishers, professionalism and legitimacy of publishers or organizations, data collection methods, statistical methods for data analysis, and citations and references. As for peer-reviewed materials published in professional journals, criteria for the review and analysis of the materials included the followings: title, abstract, purpose of the study, problem statements, research hypotheses and questions, review of literature in the study (if necessary), target population and sampling procedures, data collection methods, statistical methods for data analysis, reports of results and findings, implication of results and findings, recommendations for future research, and citations and references. For peer-reviewed materials, the review of citations and references was helpful in locating other relevant materials to be included in the literature.

This review of literature is organized as follows. The first section addresses the nature of the firm's competitiveness in today's economy. The second section presents major issues hindering the competitiveness of U.S. firms. The theoretical foundation for the current study is presented in the third section. Major constructs of the theory used in the current study are elaborated in the fourth section. The formal definition of the firm's competitiveness is discussed in the fifth section. The sixth section explains the extent to which human resource practices become a source of the firm's competitiveness. The impact of training on measures of the firm's competitiveness is presented in the seventh section. The firm's business strategies and the integration of the training in the firm's business strategies are explained in the eighth and ninth sections respectively. The final section provides the justification of the need for the current study.

The Firm's Competitiveness in the Knowledge-Based Economy

Porter (2000) categorized three types of economies in the analysis of countries' national competitiveness; they are resource-based, investment-based, and innovation- or knowledge-based economies. According to Porter, resource-based economy is the least competitive compared to investment-based and innovation- or knowledge-based economies; the innovation- or knowledge-based economy is the most competitive. For instance, the United States is currently operating in the innovation- or knowledge-based economy. Other nations, such as Singapore, Taiwan, and South Korea, are in the process of transition from investment-based economy to innovation-based economy (Porter, 2000).

Porter (1990) introduced the Diamond Model to assess the competitive advantage of the industrialized nations. Porter's Diamond Model consists of firm strategy, structure and rivalry, demand conditions, related supporting industries, and factor conditions. The concept of Porter's Diamond Model views firms in a particular country as core drivers of the economy and national competitiveness.

Operating in the innovation- or knowledge-based economy, firms become more and more dependent on the skills and knowledge of their workers. Therefore, skills and knowledge of employees moderate the level of the firm's performance and competitiveness, and the firm's performance and competitiveness, in turn, will determine the country's national competitiveness (Porter, 2000). The importance of employees' skills and knowledge for firms to compete in the knowledge-based economy justifies the need for firms to place strong emphasis on organizational learning.

Organizational learning is becoming increasingly important for firms in generating competitive advantage. For example, Janz and Prasarnphanich (2003) articulated that organizational learning has been believed to deliver creative and innovative solutions, which could result in unique competitive advantages; the researchers went on to suggest that many organizations viewed their ability to learn as an important resource that could deliver current and future competitive advantages. In addition, Lei (2003) found that learning alliances provided the key organizational design drivers that sustain competitive advantage.

Li and Zhao (2006) suggested that adopting organizational preparation for employee education and learning would have a positive effect on the firms' competitive advantages. Slater and Narver (1995) asserted that organizational learning permitted firms to have profound understanding of the needs of their customers and to develop new products and services to match the needs of those customers. Furthermore, there was a relationship between learning organization and performance outcomes of new product success, profitability, growth, and customer retention (Farrell, 2000). Baker and Sinkula (1999) found a positive correlation between learning and firms' overall performance and market share.

Hult, Snow and Kandemir (2003) provided empirical evidence; they found that learning had an impact on a firms' overall performance compared to their competitors. The researchers suggested that "learning is the primary means by which firms can develop and new products and processes that ultimately achieve desired success" (Hult, Snow, & Kandemir, 2003, p. 419).

Moreover, Jashapara (2003) surveyed senior executives from construction firms in the UK about their organization's learning behaviors and effectiveness and suggested that organizational learning had a positive impact on firms' performance. March (1991) believed that learning could influence both organizational efficiency and innovation. Mahoney (1995) viewed organizational learning as the most critical core competence of organizations.

Furthermore, Kirkwood and Pangarkar (2003) contended that "when learning becomes an integral component of the corporate strategy, is part of the daily activities, and contributes to the development of workers, the organization possesses a sustainable competitive advantage that cannot be copied" (p. 11). They continued by stating that "significant and noticeable advantages of learning organizations include: A reduction in errors and mistakes…Improved quality and innovations…A better understanding of the business…Empowered employees" (p. 11-12). In addition, Applebaum and Gallagher (2000) found tremendous rewards for firms that were willing to invest the time and energy in organizational learning.

In summary, there are three forms of economies – resource-based, investment-based, and innovation- or knowledge-based. Operating and competing in the knowledge-based economy, firms become more and more dependent on the skills and knowledge of their workers; this dependency justifies the need for firms to place strong emphasis on organizational learning.

Major Issues Hindering the Competitiveness of Firms in the US

This section discusses some major issues that hinder the competitiveness of firms in the US. Operating and competing in the globally linked, fast-changing, knowledge-based economy, the U.S. is facing major challenges whose effects can be directly felt at the firm's level.

For instance, in its recent report, the Task Force on the Future of American Innovation (TFFAI), a coalition of business, scientific and university organizations, expressed its concerns over U.S. competitive edge in global knowledge-based economy. The TFFAI (2005) developed a benchmark framework that included education, science and engineering (S&E) workforce, scientific knowledge, innovation, investment, and high-tech economic output to assess the global standing of the U.S. scientific excellence and technological innovation. The TFFAI's assessment revealed signs of trouble in every benchmark category.

Another major concern in the U.S. is the aging workforce. The Committee for Economic Development (1999) reported that the number of people aged 65 and older in the US had increased from 8% to 12% since 1950; and by 2030, an unprecedented 20% of the population will be over 65 years old. The data obtained from AARP Public Policy Institute indicated that the total labor force in the US increased by approximately 720,000 people in 2002, and this increase primarily resulted from those aged 55 and over (Rix, 2003). Weller (2003) recorded the highest increase (62.9%) of older workers aged 55 to 64 in the labor force during the postwar era by the end of 2002.

The U.S. Bureau of Labor Statistics (1998) reported that more than 25% of the current labor force would reach retirement age by 2010; this results in a potential labor

shortage of nearly 10 million. In addition, the U.S. Census Bureau (2004) indicated the number of people aged 55 and older would jump to 73% by 2020; however, the number of younger employees would increase only 5%. A survey of senior human resource executives at large firms across the United States showed that 42.4% of respondents said the aging workforce was an issue to be dealt with; only 24.7% perceived it as an opportunity to be leveraged; and interestingly, nearly 33% said it would have little or no impact on their organization. Moreover, 52.9% of those respondents who described their aging workforce as an issue to be dealt with expressed that the aging workforce is likely to lead to a workforce shortage. Almost 50% of the respondents rated their aging workforce as very important or important to their organization's goals and strategy over the next five years (Anorne, 2006).

There is a growing gap between the supply and demand of highly-skilled workers (Gates, 2007; Judy & D'Amico, 1997; NASWBC, 2002) that are the key drivers of U.S. firms. The gap here refers to "a market disequilibrium between supply and demand in which the quantity of workers demanded exceeds the supply available and willing to work at a particular wage and working conditions at a particular place and point in time" (Pindus, Tilly, & Weinstein, 2002, p. 2). The US Bureau of Labor Statistics (1998) projected a 14% increase in U.S. job openings between 1998 and 2008, yet a labor force growth of only 12% over the same period. In addition, it was estimated that 46 million college educated baby boomers were getting ready to retire over the next 20 years. By 2020, there would be deficit of at least 12 million people with some college-level education that would be needed to fill the vacancies created by the knowledge-based economy (Carnevale, 2001).

For example, Pindus, Tilly, and Weinstein (2002) studied the skill shortages and mismatches in nursing related health care employment and reported that "the US will face a nursing shortage in the next decade, and some localities are already facing shortages" (p. 39). A recent survey designed to obtain qualitative and quantitative responses from 8,000 members of the National Association of Manufacturers (NAM), identified as CEO, COOs, and presidents or senior executives of human resources, regarding the U.S. manufacturing workforce found that "the vast majority of American manufacturers continue to experience a serious shortage of qualified employees that is causing significant impact to business and the ability of the country as a whole to compete in a global economy" (Deloitte Constulting LLP, p. 4).

A recent research study published by the National Security Research Division of the RAND Corporation indicated that technology development would continue at a rapid pace over the next 15 years (RAND Corporation, 2006). According to Judy and D'Amico (1997), more intensive-technology-based jobs would go unfilled. Therefore, rapid industrial technology change and development has become the issue for both educational institutions as well as employers. Employers need to train the employees to keep current with the new technologies and other software applications. The technology-intensive industry is one of the major core drivers of the U.S. economy and competitiveness. Consequently, being unable to fill the jobs in this technology intensive-industry would put the U.S. national competitiveness at risk.

Furthermore, more employers complain about the public education for not training and equipping workers with soft skills such as organizational, communication, team work, and leadership skills. The employers implied that they could train [young]

workers to make their products or provide services to customers. The employers advocated for public education to teach students skills to work in the organization (Judy & D'Amico, 1997).

A recent report from America's Promise Alliance (2007) indicated that "most students are not being sufficiently challenged in high school, and their work is considered to be irrelevant to potential future careers; they experience too few significant career-building opportunities such as internships" (p. 2). A survey of 571 business organizations, conducted by the U.S. Chamber of Commerce (2006) indicated the employees' dissatisfaction toward the current high school curriculum. Fifty-three percent of the respondents voiced that high school students are not being adequately prepared for college and the workforce; 90% of the respondents were in the agreement that "there is a need to continue to raise the bar on achievement expectations to ensure that the United States remains competitive with other high-achieving countries" (p. 2).

In addition, a survey conducted by Peter D. Hart Research Associates, Inc. and the Winston Group (2006) showed that public high schools were not doing a good job in equipping students for high-technology science and engineering jobs compared to their counterparts from other countries and not providing students who want to enter the workforce with necessary skills to be successful in their jobs. A unique study conducted by the Conference Board, Corporate Voices for Working Families, Partnership for 21st Century Skills and the Society for Human Resource Management (2006) showed the employers increasing frustrations over the lack of skills they found in new entrants to the workforce. According to the study, high school graduates lacked "basic knowledge and skills of writing in English, mathematics, and reading comprehension, written

communications, critical thinking/problem solving, and professionalism/work ethic" (p. 11) and "two-year and four-year college graduates lacked writing in English and written communications, and leadership" (p. 11).

Similar findings of employers' dissatisfaction could also be found in the surveys conduced by Peter D. Hart Research Associates, Inc and the Winston Group (2005). Consequently, these challenges definitely present a [if not many] dynamic task to firms operating in the U.S.; that is to ensure that the strategic asset, people, stay competitive and add value to organizational health and well-being.

In summary, this section presents some issues that hinder the competitiveness of firms in the US. The issues include (a) the signs of trouble in the U.S. scientific excellence and technological innovation in globally linked knowledge-based economy; (b) aging workforce; (c) a growing gap between the supply and demand of highly-skilled workers; and (d) firms' dissatisfaction with public education.

Theoretical Foundation for the Current Study

This section explains the theoretical foundation used in the current study. Several theories have been developed and used in explaining the relationship between human resource management practices and the firm's measures of performance and competitiveness. The theories include general systems theory (von Bertalanffy, 1950), role behavior theory (Katz & Kahn, 1978), institutional theory (Meyer & Rowan, 1977), resource dependence theory (Pfeffer & Cohen, 1984), human capital theory (Becker, 1964), transaction cost economics (Williamson, 1979), agency theory (Jensen &

Meckling, 1976), and the resource-based view of the firm (Barney, 1991; Penrose, 1959; Wernerfelt, 1984).

Among all these theories, the resource-based view of the firm (RBV) appears to be the most appropriate for the theoretical background of the current study. The fundamental premise of the RBV in the context of the firm's competitiveness argues that firms are able to obtain sustained competitive advantage through the utilization of resources and capabilities that are valuable, rare, imperfectly imitable, and not substitutable to create value. The RBV further states that conventional sources such as natural resources, technology, economies of scale, operational and manufacturing designs etc., can be utilized to generate sustained competitive advantage, yet these sources can be easily copied or acquired by competitors (Barney, 1986, 1991, 1995). The RBV is the most appropriate theoretical foundation for the present study because it has been widely used as a theoretical framework and frequently cited in strategic management research (Barney, Wright, & Ketchen, 2001). In addition, the RBV provides "an economic foundation for examining the role of HR in firm competitive advantage" (Barney & Wright, 1998, p. 32).

The Resource-Based View of the Firm (RBV)

The resource-based view of the firm (RBV) theorizes that firms can use their resources and capabilities, that are valuable, rare, imperfectly imitable, and not substitutable, to create value to obtain and secure sustained competitive advantage. The RBV was first introduced and promoted by Penrose (1959) and later expanded by the work of Wernerfelt (1984), Barney (1991) and Conner (1991). Many other researchers (Black & Boal, 1994; Coff, 1997, 1999; Delaney & Huselid, 1996; Ghemawat, 2002;

Hart, 1995; Hitt, Bierman, Shimizu, & Kochhar, 2001; Huselid, Jackson, & Schuler, 1997; King and Zeithaml, 2001; Lado & Wilson, 1994; Mahoney & Pandian, 1992; Maijoor & Witteloostuijn, 1996; McEvily & Zaheer, 1999; Oliver, 1997; Peteraf, 1993; Schroeder, Bates, & Junttila, 2002; Wiggins & Ruefli, 2002; Verona, 1999; Wright, Dunford, & Snell, 2001; Wright, McMahan, McWilliams, 1994; Yeoh and Roth, 1999; Youndt, Snell, Dean, & Lepak, 1996) have followed suit by incorporating the RBV in their research work since its formal introduction in 1991. In particular, the RBV has significantly contributed to the area of strategic human resource management (Barney & Wright, 1998; Barney, Wright, & Ketchen, 2001; Wright, Dunford & Snell, 2001). Barney, Wright, and Ketchen (2001) concluded that "the emphasis on people as strategically important to a firm's success has contributed to the interaction and convergence of strategy and human resource management issues" (p. 627). In addition, empirical studies have supported the RBV. For instance, Spanos and Lioukas (2001) empirically tested the principle of the RBV by analyzing data collected from 147 CEOs of Greek firms belonging to various manufacturing firms including food and beverages, wood and furniture products, chemicals, metal products, machinery, electric equipment and appliance. The empirical test showed that the combination of organizational, marketing, and capabilities combined directly influenced market performance of the firms. Yeoh and Roth (1999) performed an empirical test of a model of the relationships among firm resources, firm capabilities, and sustained competitive advantage of the U.S. pharmaceutical industry by conducting 20 interviews with product and marketing managers at several pharmaceutical firms and industry experts at the Pharmaceutical

Manufacturers' Association. Firm resources and capabilities were found to positively influence sustained competitive advantage in a direct and indirect manner.

In summary, several theories have been developed and used in explaining the relationship between human resource management practices and the firm's measures of performance and competitiveness; however, the RBV is selected because it appears to be the most appropriate for the theoretical background of the current study.

Major Constructs of the Resource-Based View of the Firm

The resource-based view of the firm (RBV) has two major constructs. The first construct is the firm's sustained competitive advantage (SCA); and the second construct is the focus on valuable, rare, imperfectly imitable, and not substitutable resources. Each construct is discussed here.

Sustained Competitive Advantage (SCA)

The concept of the firm's competitiveness, according to Porter (1998), refers to the competitive advantage over its rivals in a particular industry. Porter emphasized that a firm gains a competitive advantage when (a) it is able to generate and sustain profits that are greater then the average for its industry; (b) it manages to deliver the same benefits as its rivals but at a lower cost; and (c) it delivers benefits that exceed those of competing products by differentiating itself in the industry. The term SCA formally emerged when Porter (1985) proposed the basic types of competitive strategies that could be employed by firms to create a competitive advantage and eventually obtain SCA. However, a conceptual definition of SCA was absent when Porter (1985) discussed the competitive strategies. Barney (1991) defined SCA as the extent that:

> A firm is said to have a sustained competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors and when these other firms are unable to duplicate the benefits of this strategy. (p. 102)

Valuable, Rare, Imperfectly Imitable, and Not Substitutable Resources

Barney (1991) classified firm resources into three main categories: physical capital resources, human capital resources, and organizational capital resources. Physical capital resources include "physical technology, plant and equipment, geographical location, and access to raw materials" (p. 101). Human capital resources include "the training, experience, judgment, intelligence, relationships, and insight of individual managers and workers" (p. 101). Organizational capital resources are "a firm's formal reporting structure, formal and informal planning, controlling, coordinating systems, as well as informal relationships among groups with a firm and between a firm and those in its environment" (p. 101).

The RBV (Barney, 1991) argues that firm resources can be utilized to obtain competitive advantage and secure sustained competitive advantage when they are valuable, rare imperfectly imitable, and not substitutable. Valuable resources are resources that enable a firm to "conceive of or implement strategies that improve its efficiency and effectiveness" (p. 106) through the exploitation of opportunities and/or neutralization of threats in a firm's environment. Valuable resources may not be a source of sustained competitive advantage if they not rare because other firms may have equal access to the same valuable resources.

Therefore, for valuable sources to be a source of sustained competitive advantage, they have to be rare. Furthermore, it is not difficult to realize that valuable and rare resources may not be sources of sustained competitive advantage if other firms, that do not possess such resources, can easily and quickly acquire them. As a result, valuable and rare resources can only be sources of sustained competitive advantage when competitors, that do not have these resources, cannot conveniently and quickly obtain them. Finally, valuable, rare, and imperfectly imitable resources can only become sources of sustained competitive advantage when there are not equivalent or substitutable resources which can be possessed or acquired by rivals to implement the same value-creation strategies.

Among three main categories of resources mentioned earlier, human capital resources fit the descriptions of resources that can be utilized to obtain sustained competitive advantage (Barney, 1991). The RBV argues that conventional sources such as natural resources, technology, economies of scale, operational and manufacturing designs, etc., can be utilized to generate sustained competitive advantage, yet these sources can be easily copied by competitors. In this case, any sources of sustained competitive advantage that cannot be easily imitated are especially important. The RBV established that people (human resources), the only repository of knowledge and skills, can be leveraged to create value in a way that is difficult for competitors to imitate (Barney, 1991).

In summary, two major constructs of the RBV are discussed. The first major construct of the RBV is the firm's sustained competitive advantage, and the second

construct is the emphasis on valuable, rare, imperfectly imitable, and not substitutable resources.

Definition of the Firm's Competitiveness

This section provides a formal definition of the firm's competitiveness used in this study. One of the most prominent and widely respected researchers in the area of competitiveness is Michael E. Porter. According to Porter (1998), a firm's competitiveness refers to the competitive advantage over its rivals in a particular industry. Porter emphasized that a firm gains competitive advantage when (a) it is able to generate and sustain profits that are greater then the average for its industry; (b) it manages to deliver the same benefits as its rivals but at a lower cost; and (c) it delivers benefits that exceed those of competing products by differentiating itself in the industry. Porter asserted that a competitive advantage enables the firm to provide superior value for its customers and generate superior profits for itself in the industry. In other words, the firms are said to have competitive advantages when they are able to differentiate themselves in the marketplace, generate greater revenues and operate at lower costs than their competitors.

Moreover, Turcotte (2002) used "innovation" as an independent variable to measure the firm's competitiveness. This implies that innovation is a key to sustaining competitive advantages. Innovation is defined by Rogers (1998) as "the application of new ideas to the products, processes or any other aspects of firm's activities" (p. 5). In its innovation survey, the Australian Bureau of Statistics (1996) defined innovation as:

> Any new or substantially improved good or service which has been commercialized, or any new substantially improved process used for the commercial production of goods and services. 'New' means new to your business. (ABS Innovation Survey questionnaire, Section B)

In 2004, Convergys Corporation (CVG) conducted a survey with over 300 senior executives in human resource, finance, and operations at U.S. and European companies with revenues of greater than $1 billion and found that a well-trained and flexible workforce could acclimatize quickly and easily to new opportunities and threats. Furthermore, the same study suggested that by having a well-trained and flexible workforce, companies can generate greater revenues, minimize operational costs, and differentiate themselves in marketplace by having a structure that is clearly aligned with corporate objectives, goals and strategies. The findings of this survey suggested that in order for firms to stay competitive, they need to be ready to respond to new business opportunities and threats (CVG, 2004).

In summary, the firm is competitive when it is able to obtain a competitive advantage over its rivals in a particular industry. The firm has a competitive advantage when (a) it is able to generate and sustain profits that are greater then the average for its industry; (b) it manages to deliver the same benefits as its rivals but at a lower cost; and (c) it delivers benefits that exceed those of competing products by differentiating itself in the industry.

Human Resource Practices as a Source of the Firm's Competitiveness

This section explains the nature of human resource practices as a source of the firm's competitiveness. Human resource practices have been established in the literature as a source of the firm's competitiveness.

For example, Barney and Wright (1998) employed the value, rareness, imitability and organization (VRIO) framework to examine the role of HR function in generating a sustained competitive advantage and concluded that the "Human Resource function manages the set of resources (e.g., human capital skills, employee commitment, culture, teamwork, etc.) that are most likely to be sources of sustained competitive advantage" (p. 43). Utility analysis (Boudreau, 1991; Cascio, 1987; Jones & Wright, 1992; Steffy & Maurer, 1988) of HR programs and empirical studies (Ichniowski, Shaw, & Prennushi, 1997; Terpstra & Rozelle, 1993; Wright, Gardner, & Moynihan, 2003; Youndt, Snell, Dean, & Lepak, 1996) of the relationship between HR practices and organizational performance indicated that HR practices provided value to the firm.

In addition, studies have shown that HR practices positively impact the firm's performance. For examples, Ichniowski, Shaw, Prennushi (1997) used data from a sample of 36 homogeneous steel production lines to empirically investigate the productivity effects of HR practices and found a positive linkage between incentive pay, recruitment and selection, teamwork, employment security, flexible job assignment, skills training, and communications. Wright, Gardner, and Moynihan (2003) employed a predictive design to include a sample of 50 autonomous business units belonging to the same corporation and found that HR practices (selection and staffing, training, pay for performance, and participation) were positively correlated with operational and financial

measures of the firm's performance. Akthar, Ding, and Ge (2008) examined, using a sample of 465 firms, the effects of HR practices on the firm's performance and found a positive linkage between the firm's product/service and financial measures of the firm's performance and similar HR practices. Delaney and Huselid (1996) studied 590 for-profit and nonprofit firms and found positive association between HR practices (training effectiveness and staffing selectivity) and perceptual measures of the firm's performance.

Huselid (1995) evaluated the links between HR practices (personnel selection, selection performance appraisal, incentive compensation, job design, grievance procedures, information sharing, attitude assessment, and labor-management participation, training, and promotion) and the firm's performance by analyzing data obtained from the survey of human resources professionals of 968 firms and found that these HR practices significantly impacted employees' turnover and productivity and measures of financial performance. Furthermore, Youndt, Snell, Dean, and Lepak (1996) found HR practices (staffing, training, performance appraisal, and compensation) that focused on human capital enhancement, were directly related to multiple measures of operational performance by analyzing data obtained from a survey of 97 plant (both general and functional) managers.

In summary, human resource practices have been conceptually and empirically documented in the literature to have a positive linkage with organizational performance and competitiveness. The impact of training, one of the human resource practices, is specifically discussed in details in the next section.

The Impact of Training on the Firm's Competitiveness

This section discusses the impact of training on the firm's competitiveness. Many studies have documented the impact of training on the firm's competitiveness.

For instance, Caldeira (2001) found that one of the key areas correlated to superior performance was workforce training. A case study of Reynolds and Reynolds, the leading provider of integrated information management solutions to the automotive retailing marketplace, conducted by Hollis (2002) showed that training drove business success through improving productivity and increasing competitiveness in the marketplace. A report prepared by Relais International (2002) indicated that British managers were looking to incorporate training as a tool to improve their firms' performance and competitiveness. Maurer (2001) concluded that "enhanced employee performance through training has always been recognized as an important means of securing the competitive advantage" (p. 34).

As quoted in the *Engineer*, a magazine serving the UK's engineering technology community, Shorrocks (2003), Icore's human resource manager, asserted that:

> Training is a key part of our business strategy and is essential to our competitiveness. We need our people skilled up so that they are at their best at solving customers' problems and making our products efficient and safely. (p. 35)

Whitney (2005) suggested that the deployment of effective business training for firms could increase the chance for organizational success and competitiveness in the long term. In addition, Fawcett and Myers (2001) surveyed 158 managers from randomly selected U.S. manufacturing firms and found a strong positive correlation, $r(158) = 0.81$, $p < .01$, between employee development and firm performance. Moreover, Morton

(2002) highlighted the impact of training on the success of the distribution industry by emphasizing that "training workers about safety and continually maintaining the awareness of the need for safe procedures can pay big company benefits" (p. 32) and "hiring and training are the key survival and supply chain success" (p. 33).

The National Centre for Vocational Education Research (NCVER) of Australia (2002) conducted a study of 40 large Asian businesses on training strategies, emerging skill shortages, government investment in training, and the quality of the education and training sector. The respondents were asked to rate their agreement with statements related to training based on a 5-point scale. The results showed that investment in training was an important staff retention tool, and trained employees were critical to profitability. In addition, training was the best way to improve efficiency and cut costs; training minimized exposure to employee-related liabilities. Moreover, training provided a more flexible workforce and allowed firms to get the best out of new technology. Furthermore, training was a lever for staff performance and brought new ideas and innovation to the business. The results also revealed that training provided product quality, and training was an important tool for attracting and keeping high caliber staff. And training was a major element of competitive advantage and of staying globally competitive.
In addition, Russell (2003) cited a study of the competitiveness of the U.S. wood products industry which suggested that U.S. producers would have to place more emphasis on work force training and education in competing against a flood of cheap imported products.

Another approach to understand the training impact on firms' competitiveness is to identify training determinants. For example, in the same study conducted by NCVER,

when respondents were asked about the factors influencing the training agenda, the results showed the factors that influenced training agenda included growing casualties of jobs; outsourcing non-core activities; workplace compliance requirements; globalization and export focus; growth of computer/information technology; attracting and retention of staff; emergence of knowledge economy; and increasing competitiveness in the marketplace. The results of this study highlighted major impacts of training on a firm's competitiveness (NCVER, 2002).

In their study, Smith and Hayton (1999) found similar training drivers; they were workplace change, new technology and production improvement, and quality initiatives such as customer service and total quality management. In addition, Keep and Mayhew (1996) viewed the link between training and economic performance as a driving force behind corporate training.

Training and the Firm's Readiness Preparation for New Opportunities and Threats

A survey with over 300 senior executives in human resource, finance, and operations at U.S. and European companies with revenues of greater than $1 billion conducted by Convergys Corporation (CVG) showed that 65% of corporate executives expressed that in order to gain a competitive advantage in today's changing markets, a flexible workforce was essential. Nevertheless, those executives said that retaining key talent was quite a challenge due to the extent that the companies did not have the best systems in place to identify skilled employees. They added that fewer training and development programs were being provided to their strategic employees; more training and development programs should be offered to those employees to help them stay current in the industrial and market trends and technological innovation (CVG, 2004). In

its survey, PricewaterhouseCoopers (1998) revealed that 70% the Fortune 1000 firms indicated that a barrier to growth was a lack of trained employees. Moreover, many researchers (Adler, 1992; Applebaum & Batt, 1994; Braverman, 1974; Cappelli, 1993; Cappelli & Rogovsky, 1994; d' Iribarne, 1986; Dyer & Reeves, 1995; Finger & Burgin, 1996; Gallie & White, 1993; Kern & Schumann, 1984; MacDuffie, 1995; Mathews, 1990, 1994; Osterman, 1995; Piore & Sabel, 1984; Senge, 1990; Watkins & Marsick, 1992; Wilkinson, 1983) indicated that the factors that impacted management decisions to train employees were (a) employee performance improvement; (b) the improvement of the adaptability and flexibility of the employees; (c) investment in acquiring new technology; (d) new work practices and sophisticated human resource system; and (e) changes in business strategy. Using four case studies in Greek banks, Glaveli and Kufidu (2005) suggested that the role of training aimed to maintain, raise, and innovate the core competencies for a strategic positioning of the firm in the industry. In a study to compare training and development practices within and across nine countries and one region, Drost (2002) reported that training was a means to prepare employees for future job assignments.

Training Impact on the Firm's Productivity and Efficiency

Blundell, Dearden, and Meghir (1999) provided a review of the evidence on the returns to education and training for the individual, the firm and the economy at large. American Society for Training and Development's 2003 State of the Industry Report quantitatively showed a positive relationship between training expenditures and both revenues and profitability (ASTD, 2003). Moreover, another study, funded by the U.S. Department of Education with the Bureau of Census, determined how training impacted

productivity. The results showed that increasing an individual's educational level by 10% increased productivity by 8.6%; increasing an individual's work hours by 10% increased productivity by 6.0%; and increasing capital stock by 10 percent increased productivity by 3.2% (US Department of Education, 2003). Wright, Knight, and Speed (2001) found that:

> Companies that increased their annual training budget grew profits by 11.4% - those that didn't increased profits by only 6.3%. Learning businesses increased turnover by 66% more than those who didn't invest in training - 15% growth, compared to 9%. Three in four (75%) of companies who have seen measurable staff improvements following training also saw profit increases. Nearly all companies (95%) were in favor of training, saying it is essential for success, with three in four (73%) strongly in favor, but just half (51%) have increased their budget – the key measure that links training strategy to profit making. (p. 3)

Using sales per worker and valued-added per worker as measures of productivity, Lyau and Purcel (1995) indicated that 10% increase in training spending per worker led to an increase of 1% in value-added per worker.

Other studies offered the evidence to some extent that improved productivity was generated by training (Booth 1991; Brown 1990; Dockery & Norris 1996; Duncan & Hoffman 1996; Lillard & Tan 1992; Lynch 1996; Mincer, 1993). In a survey of 18 companies in Hong Kong, Malaysia, Indonesia, South Korea, Taiwan and Singapore, Chalkely (1991) reported that managers perceived training to generate beneficial outcomes for their firms. Loundes (1999) also provided evidence showing the impact of training on firms' productivity improvement.

Moreover, Bartel (1991) found that the implementation of new employee training programs significantly increased the productivity. Using the data from the employment opportunities pilot projects (EOPP), Bishop (1990) documented the increase of the productivity of newly hired personnel, which occurred as a result of the participation in firms' training program. Holzer, Block, Cheatham, & Knott, (1993) found that firms that offered more formal training had higher quality work performed by their employees.

As quoted in the *Engineer*, a magazine serving the UK's engineering technology community, Mullin (2003), Bosch Rexroth's personnel manager, stated that "training leads to competent and motivated employees, which in turn leads to fewer problems in the production process and the retention of happier clients" (p. 35). The benefits from training as identified by management included improved occupational health and safety outcomes, greater motivation, lower staff turnover, lower wastage, a more flexible workforce, higher productivity or improved quality of products and services, instilling corporate culture or strategic goals and a range of non-economic benefits (Billet & Cooper, 1997; Coopers & Lybrand 1994; Dockery, Koshy, Stromback, & Ying, 1997). In surveys conducted by the Centre for Labor Market Research in Australia, employers believed that training benefited the firms (Dandie, Dockery, Koshy, Norris, & Stromback, 1997; Dockery et al., 1997).

Training Helps Firms Differentiate Themselves in the Marketplace

Kleinfelder (2005), founder of Alternative Technology, emphasized that "training helps salespeople differentiate themselves in the marketplace" (p. 4). In addition, Lowe (2005) discussed training integration in a firm differentiation strategy. A research study, conducted by Wilson Learning Corporation (a provider of Human Performance

Improvement solutions), showed that traditional sources of competitive differentiation – a superior product or service, increased size through mergers and acquisitions, or reductions in price – no longer suffice in today's business operation environment (Edina, 2005). The same research study showed that many of the leading sales organizations in today's arena were creating competitive advantage by equipping their sales people with business consulting skills. For instance, by learning a consultative process and identifying more appropriate ways to gain an understanding of the customer's business and then applying these methods effectively, salespeople begin to approach clients from a more strategic standpoint and develop more profitable and compelling solutions (Edina, 2005).

Training and the Firm's Innovation

Turcotte (2002) found that "both classroom and on-the-job training, innovation in products, services and processes, and implementation of new technologies or new software are variables that are positively associated with support for training" (p. 22). Baldwin (1999) conducted a review of a number of Canadian studies and developed a positive linkage between innovation and training. Baldwin and Johnson (1996) found that firms with a high level of innovation provided training to a larger number of their workers, both through formal and informal platforms. In addition, Baldwin (2000) emphasized the important relationship between innovation, skills and training, and the success of start-up firms. Blundell, Dearden, Meghir, and Sianes (1999) found a direct link between employee education and the ability of those employees to be innovative. By analyzing the data obtained from U.S. firms and their respective employees, Frazis, Gittlemanm, and Joyce (1998) found firms that had more innovative workplace practices had a tendency to offer more training. In addition, Dockery (2001) found that the

proportion of employees receiving on-the-job training was positively associated with the firm's innovation.

In summary, this section presented the qualitative and quantitative supports regarding the impact of training on various measures of the firm's competitiveness. Training has been conceptually and empirically documented to have a positive impact on the firm's (a) readiness preparation for new opportunities and threats, (b) productivity, (c) efficiency, (d) differentiation in the market place, and (e) innovation.

The Firm's Business Strategies

This section discusses several business strategies. The strategies were introduced by Ansoff (1957) and Porter (1980).

In 1957, Ansoff developed the the Ansoff Product-Market Growth Matrix. The matrix allows firms to grow their businesses through existing and/or new products, in existing and/or new markets. Four strategies are deprived from this matrix, namely market penetration, market development, product development and diversity. Market penetration is a strategy that the firm employs to obtain growth by using the existing products in its current market segment in order to increase its market share. The strategy that the firm uses to achieve growth by targeting its existing products to new markets is called market development. Product development is a strategy for growth which is employed by the firm to develop new products for its existing markets. Finally, when the firm seeks to develop new products for new markets, the firm is said to pursue the diversification strategy (Ansoff, 1957).

Porter (1980) proposed three general types of strategies that are commonly used by businesses: they are cost leadership strategy, differentiation strategy, and focus strategy. Cost leadership strategy refers to the extent that the firm operates at low cost in an industry for a given degree/level of quality compared to its rivals. If the price war takes place in the industry, the firm can remain profitable, yet their competitors suffer losses. When the firm develops a product or service with unique attributes which are perceived or valued by customers to be better or different from the same products offered by the rivalry in the industry, the firm is said to employ a differentiation strategy. The firm employs the focus strategy to concentrate on a narrow market segment, and with that particular segment the firm attempts to obtain either a cost advantage or differentiation.

In summary, seven business strategies were identified. Ansoff's strategies include market penetration, market development, product development and diversity. Porter's three general types of strategies consist of cost leadership strategy, differentiation strategy, and focus strategy.

The Integration of Training in the Firm's Business Strategies

This section discusses the training integration in the firm's strategies. The integration of training in the firm's business strategies is reported in several studies.

For instance, Bartel (1994) found that firms that actively planned their human resources were more likely to propose training. Hendry, and Pettigrew (1989) and Hendry (1991) examined the function of training as part of the broader human resource strategies of a range of firms in the UK and developed a framework that allowed training to become a response in the competitive environment. Moreover, training has been frequently

perceived to be integrated with broader structural change and innovation inside the firms. (Baker & Wooden 1995; Billet & Cooper, 1997; Kay, Fonda, & Hayes, 1992; Catts, 1996; Coopers & Lybrand 1994; Ichniowski, Kochan, Levine, Olson, & Strauss, 1996). Geisler and Justus (1998) discussed the integration of training as a strategic management tool. They wrote:

> Without strategic training, organizations invariably end up with a patchwork quilt of corrective procedures and polices that are impossible to follow and impossible to control or monitor. Training all employees to analyze their current work processes allows the employees to understand several things. First, they can appreciate the gaps that may exist between what is currently being done and what needs to be done. Next, they have the opportunity to make corrections in their systems within a safe environment. Finally, such training provides an opportunity for the employees to contribute to the development of the company and to receive recognition for changing. (p. 25)

McClelland (1994) suggested that human resource managers who were in charge of the design and implementation of the management development and training needed to "focus on the corporate vision and long-term growth strategies" (p. 9). The researcher concluded by suggesting that firms that "integrate strategic management development into competitive strategy formulation process will find that they have a greater degree of flexibility in the allocation and efficient usage of their managerial talents while becoming effectively proactive to constantly changing market conditions" (p. 12). Moreover, Nathan and Stanleigh (1991) strongly encouraged training mangers to develop a strategic plan that is demonstrably aligned with the company. Likewise, one of the many benefits

from training as identified by management was instilling corporate culture or strategic goals (Billet & Cooper, 1997; Coopers & Lybrand 1994; Dockery et al., 1997).

In a survey of 18 companies in Hong Kong, Malaysia, Indonesia, South Korea, Taiwan and Singapore, Chalkley (1991) found that 60% of the firms established training programs to address the skill shortages in their companies. Dockery (2001) suggested that "training needs to be considered in a wider strategic context" (p. 17); the researcher firmly stated that "training is an important tool in the implementation of innovations and other business changes" (p. 53). In the same study, Dockery found a higher training frequency in firms, which had a formal strategic or business plan and conducted formal performance comparisons with other firms. Finally, Dockery wrote:

> The results thus provide strong evidence that changes in training occur in tandem with other business changes and innovation -- at least within the same twelve-month time frame. Hence it is clear that training is used to facilitate new developments within a business. (p. 36)

Nikandrou and Papalexandris (2007) examined the practices adopted by successful Greek firms, with acquisition experience, in managing their personnel and found that increased human resource involvement in building organizational capability through training and development activities was one of the main strategic human resource practices implemented by those companies.

In summary, the integration of training in the firm's strategies has been reported in the literature. Finally, this chapter presented the review of literature for the current study. The following chapter presents the research methods.

CHAPTER 3

RESEARCH METHODS

Introduction

The problem of the current study was to determine training professionals' perceptions of their awareness of and involvement in the integration of training in the firm's business strategies and the impact of training on the firm's competitiveness. The following research questions were proposed to address the problem of this study.

Question 1: What is the training professionals' level of perceived awareness of the integration of training in their firms' business strategies?

Question 2: What is the perceived involvement of training professionals regarding the integration of training in their firms' business strategies?

Question 3: What is the perceived (a) impact of training on the competitiveness of training professionals' firms, and (b) on what is the perception based?

Question 4: Is there a relationship between the perceived impact of training on the competitiveness of training professionals' firms and their

a. *Gender*
b. *Age*
c. *Number of years in current firm*
d. *Highest educational level*
e. *Type of firm*
f. *Size of firm*
g. *Firm's engagement in global operations?*

Question 5: Is there a relationship between the items on which training professionals base their perception of the impact of training on their firms' competitiveness and their

a. *Gender*
b. *Age*
c. *Number of years in current firm*
d. *Highest educational level*
e. *Type of firm*
f. *Size of firm*
g. *Firm's engagement in global operations?*

Question 6: Is there a relationship between training professionals' perceived involvement in the integration of training in their firms' business strategies and their perceived impact of training on their firms' competitiveness?

Research Design

The design of the present study followed a non-experimental descriptive study using online survey method for data collection. The online survey method was utilized to collect necessary data to answer the questions posed in the present study because the online survey provided great convenience and efficiency in respect to data collection; it provided economies of scale to the investigator and saved time (Taylor, 2000; Yun & Trumbo, 2000). In addition, survey studies have been very popular and used by many researchers in social science to study perceptions of individuals and groups. (Bachmann & Elfrink, 1996; Garton, Haythornthwaite, & Wellman, 1999; Taylor, 2000; Yun &

Trumbo, 2000). Furthermore, the variables in the current study were treated as characteristics instead of dependent or independent variables because it was not the objective of this study to make any predictions or identify any causal effects between the variables.

Population and Sample Size

Population

The target population identified in the present study was training professionals who interacted on the American Society for Training and Development (ASTD) discussion board located at http://community.astd.org and networked on Twitter, Facebook, and Linkedin. The training professionals were identified as those whose jobs were related to training including, but not limited to, trainers, training specialists, training managers, training administrators, training supervisors, training directors, and training consultants.

The present study utilized a convenience sample due to the fact that training professionals who interacted on the American Society for Training and Development (ASTD) discussion board located at http://community.astd.org and networked on Twitter, Facebook, and Linkedin were conveniently accessible and technologically savvy. As of September 15, 2009, the population parameter of training professionals who interacted on the ASTD discussion board located at http://community.astd.org and networked on Twitter, Facebook, and Linkedin was estimated at 6,450 (ASTD discussion board = 6,010; Twitter = 24; Facebook = 147; Linkedin = 269). Detailed explanation of the estimation of the number of training professionals who interacted on the ASTD

discussion board located at http://community.astd.org and networked on Twitter, Facebook, and Linkedin is described below.

Estimation of the number of training professionals interacting on ASTD discussion board. The number of training professionals on ASTD discussion board was estimated based on the total number of registered users. The total number of registered users (available at the time of estimate) was 6,010. Although eight invitations were posted on the ASTD discussion board, it was assumed that all the 6,010 registered users saw or read the invitations.

Estimation of the number of training professionals networking on Twitter. All the ASTD chapters' Twitter accounts (available at the time of estimate) were used for estimating the total number of training professionals networking on Twitter. Although invitations were only posted on the 26 ASTD chapters' Twitter accounts, it was assumed that all the 5,301 followers (available at the time of estimate) of the 26 ASTD chapters' Twitter accounts saw or read the invitations.

Estimation of the number of training professionals networking on Facebook. A search for ASTD members and fans of ASTD was performed. In total, there were 4,031 training professionals networking on Facebook calculated using all the ASTD groups' Facebook accounts as well as the number of all the fans on those accounts at the time of estimate. However, the investigator could send an invitation to only 147 training professionals networking on Facebook. When the investigator tried to send an invitation to the 148th training professional networking on Facebook, he was warned by the Facebook's system that he was engaging in an annoying behavior. Consequently, the

Facebook's system then blocked the "send" feature of the investigator's Facebook account for a few days.

Estimation of the number of training professionals networking on Linkedin. A search for ASTD members was performed on Linkedin. The search result indicated that there were 17,135 training professionals networking on Linkedin. However, the investigator could send an invitation to only 269 training professionals networking on Linkedin due to restrictions imposed on the investigator's account by Linkedin. Specifically, Linkedin would not allow the investigator to access more training professionals' contact information unless the investigator upgraded his account by paying a monthly charge.

Sample Size

To estimate a minimum sample size (n) of the population (N) of 6450 training professionals, $n = N / [1 + N*(e)^2]$ was adopted from Isreal (1992) using a 95% confidence level and ± 5% confidence interval (e). Thus, the minimum sample size was calculated to be 376 ($n = 6450 / [1 + 6450*(0.05)^2] = 376$). To generate a higher response rate, a total number of 450 invitations soliciting participation in the survey were initiated on the ASTD discussion board located at http://community.astd.org, Twitter, Facebook, and Linkedin.

There were 111 responses in total. However, several responses contained some missing data. For instance, several responses contained missing data on some questionnaire items and had complete data on other items. Therefore, although several responses contained missing data, they were still included in the statistical analysis. The

response rate was estimated at 24.66% -- total number of valid responses (111) divided by total number of invitations (450) multiplied by 100 -- [(111/450)*100 = 24.66%].

While the response rate of 24.66% was considered acceptable since the average estimate of response rate for online surveys is between 20% and 30% (Hamilton, 2003), the results were subject to non-response bias (due to lower response rate). Lindner, Murphy, and Briers (2001) recommended that when a response rate of less than 85% is achieved, nonresponse error should be controlled; one of the methods recommended by the researchers (Lindner, Murphy, & Briers, 2001) was to compare early to late respondents. Gall, Borg, and Gall (1996) recommended that the comparison of early and late responses should be performed for each item of the instrument to determine if nonresponse error presents a problem.

As a result, the comparison of the mean rating of each item in the fifth section (items 10 through 16) and sixth section (items 17 through 25) of the first 20 responses and the latest 20 responses was performed using the independent samples *t*-test;

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_{X_1X_2} \cdot \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

where X_1 is mean rating of each item of the first 20 responses, and X_2 is the mean rating of each item of the latest 20 responses. $S_{X_1X_2}$ is an estimator of the common standard deviation of the first and latest samples. In addition, n_1 is the number of valid responses of the first 20 responses, and n_2 is the number of valid responses of the latest 20 responses. As shown in Table 1, the mean ratings of each item in the fifth section (items 10 through 16) and sixth section (items 17 through 25) of the first 20

Table 1

The Comparison of the Mean Ratings of Each Item in the Fifth Section (items 10 through 16) and Sixth Section (items 17 through 25) of the First 20 Responses and the Latest 20 Responses

Items	n	Mean	Mean Difference	*df*	*t*	*p*
Item 10			.41	33	.914	.367
- Early 20	19	3.79				
- Late 20	16	3.38				
Item 11			.20	32	.442	.661
- Early 20	18	3.33				
- Late 20	16	3.13				
Item 12			.92	26	1.763	.095
- Early 20	15	4.07				
- Late 20	13	3.15				
Item 13			.27	26	.501	.622
- Early 20	16	3.69				
- Late 20	12	3.42				
Item 14			.87	29	1.717	.099
- Early 20	16	4.00				
- Late 20	15	3.13				
Item 15			.28	21	.489	.630
- Early 20	14	3.50				
- Late 20	9	3.22				
Item 16			1.00	24	1.764	.091
- Early 20	13	3.38				
- Late 20	13	2.28				
Item 17			.539	37	1.125	.268
- Early 20	20	3.75				
- Late 20	19	3.21				
Item 18			.356	36	.810	.423
- Early 20	20	3.80				
- Late 20	18	3.44				
Item 19			.382	37	.919	.364
- Early 20	20	3.75				
- Late 20	19	3.37				

Table Continues

Table 1 (Continued)

Items	n	Mean	Mean Difference	*df*	*t*	*p*
Item 20			.776	37	1.300	.202
- Early 20	20	3.25				
- Late 20	19	2.47				
Item 21			.994	36	1.725	.093
- Early 20	20	2.55				
- Late 20	18	1.56				
Item 22			.433	36	.683	.499
- Early 20	20	2.60				
- Late 20	18	2.17				
Item 23			.467	36	.778	.442
- Early 20	20	3.30				
- Late 20	18	2.83				
Item 24			.628	36	1.170	.250
- Early 20	20	3.35				
- Late 20	18	2.72				
Item 25			.772	36	1.440	.158
- Early 20	20	3.55				
- Late 20	18	2.78				

Note: n = valid responses of the first 20 responses and the latest 20 responses.

responses and latest 20 responses were not statistically different at .05 level. This implied that the first 20 responses and latest 20 responses were similar and did not show any systematic differences that might cause any major concerns or red flags.

Research Instrument

The online questionnaire was developed by the researcher. The questionnaire consisted of seven sections. The first section asked respondents to provide demographic data. The second section asked respondents to indicate types of training provided in their firms. The third section asked respondents to indicate training delivery formats adopted

by their firms. The items found in the second and third sections were adopted from the 2008 industry report and exclusive analysis of the U.S. training industry (Bersin & Associates, 2008). The fourth section asked respondents to provide general information related to their firms. The fifth section asked respondents if they were aware of the integration of training in their firms' business strategies. If they answered "yes", then they were asked to rate (5=Very High, 4=High, 3=Moderate, 2=Low, and 1=Very Low) their involvement in the integration of training in the firm's strategies. The sixth section asked respondents to rate (5=Very High, 4=High, 3=Moderate, 2=Low, and 1=Very Low) their level of agreement of the impact of training on measures of the firm's competitiveness; the N/A option was also provided. In addition, respondents were asked how (on what basis) they determined the extent they perceived training to impact their firm's competitiveness. Finally, the seventh section provided respondents an optional comment text area should they have any comments or opinions to add to the questionnaire. A copy of the instrument is located in Appendix B.

Validity and Reliability of the Data Collection Instrument

Validity of the Data Collection Instrument

This section provides a detailed explanation of how the validity and reliability of the data collection instrument were established. First, the items found in the instrument were constructed based on an extensive review of literature. In addition, a panel of experts was formed to further examine the content validity of the instrument. The experts were faculty members in the Department of Workforce Education and Development, Southern Illinois University Carbondale. Furthermore, as a part of the validity

establishment process, doctoral students (some of whom have worked as training professionals), in the Department of Workforce Education and Development, Department of Economics, and College of Business at Southern Illinois University Carbondale were invited to participate in a pilot survey. The pilot study was instrumental for the establishment of the validity of the data collection instrument. The following paragraph describes specifically how the pilot survey was conducted.

Initially, an application was submitted to the Southern Illinois University Carbondale (SIUC) Human Subjects Committee in the Office of Research Development and Administration for review of the data collection protocol. After the permission to conduct the survey was granted (Appendix C), the pilot survey was constructed and divided into two parts; part A & B. Part A was the actual survey itself, which was approved by the SIUC Human Subjects Committee, and Part B was the survey of the participants' feedback on the actual survey. The pilot survey was located at http://mypage.siu.edu/vsum/pilot.html. On September 08, 2009, an invitation to participate in the pilot survey was posted on the listserv maintained by the Office of Graduate Programs of the Department of Workforce Education and Development. The invitation was also e-mailed to all current doctoral students in the Department of Economics and College of Business; the e-mail addresses were obtained from the websites of the Department of Economics and College of Business. A total of 20 responses were received. Ten responses were from doctoral students in the Department of Workforce Education and Development; five responses were from doctoral students in the Department of Economics, and other five responses were from doctoral students enrolled in the College of Business.

Feedback obtained from participants in the pilot survey was examined, and one particular change was made to the fifth section of the instrument which asked respondents if they were aware of the integration of training in their firms' business strategies. If they answered "yes", then they were asked to rate (5=Very High, 4=High, 3=Moderate, 2=Low, and 1=Very Low) their involvement in the integration of training in the firm's strategies. Initially, a brief definition of a particular strategy and a question mark (when clicked on a detailed explanation of each strategy popped up as a new window) were included in each statement in the fifth section. However, the participants in the pilot study commented that inclusion of the definition made each of the statements in the fifth section look crowded and lengthy; consequently, the change was to keep the question mark and remove the definition from each of the statements.

In summary, the extensive review of literature, input from the panel of experts, and feedback from participants in the pilot study were sufficient in establishing the data collection instrument validity. How the reliability of the data collection instrument was established is described in the following section.

Reliability of the Data Collection Instrument

Using data obtained from the pilot survey, the Cronbach's α (alpha) was calculated to determine the reliability of the data collection instrument. The formula below was used to estimate the Cronbach's α (alpha);

$$\alpha = \frac{N}{N-1}\left(1 - \frac{\sum_{i=1}^{N} \sigma_{Y_i}^2}{\sigma_X^2}\right)$$

where N is the number of the items, σ_X^2 is the variance of the observed total rating scores, and $\sigma_{Y_i}^2$ is the variance of item i. The Cronbach's α (alpha) was only calculated for the

fifth and sixth sections of the survey. Based on data obtained from the pilot survey, the Cronbach's α (alpha) for the fifth section (items 10 through 16) was .954; the Cronbach's α (alpha) for the sixth section (items 17 through 25) was estimated at .909. Based on data obtained from the official survey, the calculation of the Cronbach's α (alpha) for the fifth section (items 10 through 16) and sixth section (items 17 through 25) was estimated at .930 and .920 respectively; these values were much higher than the acceptable value of .700. Since the values of Cronbach's α (alpha) were very high, it raised a concern regarding multicollinearity.

According to Tabachnick and Fidell (1996), multicollinearity occurred when there was a very high correlation (e.g. r = .80 or .90) among variables or items that were included to measure a construct or answer a question. To avoid multicollinearity problems, Tabachnick and Fidell (2000) recommended that bivariate correlations between items be less than .70.

As shown In Table 2a, five correlations were .70 or higher. Item 10 and 12 were very highly correlated, r = .81; this is because item 10 and 12 were interrelated due to the fact that both items are Porter's (1980) generic strategies. Furthermore, item 14, 15, and 16 were interrelated because these items were Ansoff's (1957) growth strategies. However, when item 10 was removed, the computed Cronbach's α (alpha) was estimated at .917. Likewise, the value of Cronbach's α (alpha) was estimated at .925 when item 12 was excluded. As reported in Table 2b, three correlations were .70 or higher. The correlation between item 18 and 19 was the highest, r = .79; this was because these two items (Item 18 = productivity; item 19 = efficiency) were interrelated. Yet when item 18

or 19 was removed the Cronbach's α (alpha) was estimated at .912. Moreover, item 23 and 25 were related because they were both measures of the firm's innovation.

All the values of *Cronbach's Alpha if Item Deleted* were lower than the overall alphas; this implied that no single item was to be excluded (Tabachnick & Fidell, 1996). This also means that the items included in the fifth and sixth sections, respectively, were not redundant; therefore, multicollinearity was not a serious problem.

Table 2a

Inter-Item Correlation (Item 10 to 16)

Items	Item 10	Item 11	Item 12	Item 13	Item 14	Item 15	Item 16	Cronbach's Alpha if Item Deleted
	r	*r*	*r*	*r*	*r*	*r*	*r*	
Item 10	-							.917
Item11	.68	-						.918
Item 12	**.81**	.63	-					.925
Item 13	.68	.65	.63	-				.917
Item 14	.68	**.70**	.57	.64	-			.918
Item 15	.67	.66	.63	**.79**	**.75**	-		.911
Item 16	.57	.64	.42	.61	.64	**.73**	-	.926

Note: Cronbach's Alpha if Item Deleted is the estimated value of Alpha when the item is excluded.

Table 2b

Inter-Item Correlation (Item 17 to 25)

Items	Item 17	Item 18	Item 19	Item 20	Item 21	Item 22	Item 23	Item 24	Item 25	Cronbach's Alpha if Item Deleted
	r	*r*	*r*	*r*	*r*	*r*	*r*	*r*	*r*	
Item 17	-									.914
Item 18	**.75**	-								.912
Item 19	.60	**.79**	-							.912
Item 20	.53	.49	.52	-						.913
Item 21	.45	.49	.50	.68	-					.914
Item 22	.51	.47	.49	.59	.66	-				.915
Item 23	.54	.57	.59	.53	.56	.67	-			.910
Item 24	.53	.64	.63	.58	.58	.50	.57	-		.911
Item 25	.56	.57	.64	.59	.48	.48	**.70**	.66	-	.911

Note: Cronbach's Alpha if Item Deleted is the estimated value of Alpha when the item is excluded.

Data Collection Process

After the permission to conduct the survey was granted to the researcher by the Southern Illinois University Carbondale (SIUC) Human Subjects Committee in the Office of Research Development and Administration and the committee chairs' agreement, a total number of 450 invitations soliciting participation in the survey were initiated at about 3:45 PM CST on September 15, 2009, on the ASTD discussion board located at http://community.astd.org, Twitter, Facebook, and Linkedin. Specifically, eight invitations were posted on the ASTD discussion board. Twenty-six invitations were posted on ASTD Chapters' Twitter pages, and 269 invitations were sent to training

professionals on Linkedin. Finally, 147 invitations were sent to training professionals on Facebook. A reminder was initiated at around 6:30 AM CST on September 22, 2009.

The invitation was a short message electronically posted in the ASTD's online forum and ASTD chapters' and members' Twitter pages and sent to ASTD chapters and members on Facebook and Linkedin soliciting participation in the study.

For the ASTD online forum, Facebook, and Linkedin, the invitation message was written as follows:

> Subject: Surveying training professionals for my Ph.D. dissertation. Please help.
>
> My name is Vichet Sum, a Ph.D. candidate in the Department of Workforce Education and Development at Southern Illinois University. I am surveying training professionals for my dissertation. Here is the link to my survey: http://mypage.siu.edu/vsum. Your assistance is highly appreciated. Thank you.

A separate short message was posted on all available ASTDs' Twitter accounts. The message was written as follows:

> Surveying training professionals for my Ph.D. dissertation. Please help. Here is the link to my survey: http://mypage.siu.edu/vsum/

When a respondent clicked on the link (http://mypage.siu.edu/vsum), he/she was welcomed by a formal welcome e-letter (Appendix A). The e-letter was intended to formally brief the respondent about the nature of survey. For instance, the e-letter formally invited the respondent to participate in the survey and informed him/her that it would take only 10 to 15 minutes to complete the questionnaire. The e-letter also emphasized that the respondent's participation was voluntary and his/her responses would be kept anonymous and confidential. Once the respondent completed the online

questionnaire and hit the "Submit Survey" bottom, the submitted data were e-mailed as an HTML document to the investigator.

Data Analysis

Data analysis took place immediately following the pre-specified date for data collection cut off point which was on September 25, 2009, at 5:30 PM CST. Any and all responses that had not been entered into the analysis system were entered, and the data were reviewed for accuracy and completeness. Random samples were pulled from the file of data collection instruments, and the corresponding entries were audited to insure proper data input. The complete computer tabulation of the data collection responses was performed using the Statistical Package for the Social Sciences (SPSS) 16.0. The data were analyzed using central tendency, Chi-square (χ^2) and Spearman's correlation coefficient (r_s). The following is the formula used for Chi-square (χ^2) calculation,

$$\chi^2 = \sum_{i=1}^{R} \sum_{j=1}^{C} \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

where O_{ij} is the observed frequencies in a cell, and E_{ij} is the expected frequencies in a cell. The Spearman's correlation coefficient (r_s) was calculated using the classic Pearson's correlation coefficient between ranks of the ratings. Here is the formula,

$$\rho = \frac{n(\sum x_i y_i) - (\sum x_i)(\sum y_i)}{\sqrt{n(\sum x_i^2) - (\sum x_i)^2}\ \sqrt{n(\sum y_i^2) - (\sum y_i)^2}}.$$

where n is the number of cases used in the correlation. x_i is the respondent i's rank of the rating on variable x. And y_i is the respondent i's rank of the rating on variable y. Table 3 provides a summary of the research questions, question items, and statistical analysis to

be used to address each of the questions. This chapter discusses the research methods used in this study. The research results are presented in the next chapter.

Table 3

Statistical Analysis of Data by Research Questions

Research Questions	Questionnaire Items Used	Statistical Analysis Used
Question 1: What is the training professionals' level of perceived awareness of the integration of training in their firms' business strategies?	Items 10 through 16	- Frequency - Percentage - Mean - Cronbach's α (alpha)
Question 2: What is the perceived involvement of training professionals regarding the integration of training in their firms' business strategies?	Items 10 through 16	- Frequency - Percentage - Cronbach's α (alpha)
Question 3: What is the perceived (a) impact of training on the competitiveness of training professionals' firms, and (b) on what is the perception based?	Items 17 through 25	- Frequency - Percentage - Mean - Cronbach's α (alpha)
Question 4: Is there a relationship between the perceived impact of training on the competitiveness of training professionals' firms and their (a) gender, (b) age, (c) number of years in current firm, (d) highest educational level, (e) type of firm, (f) size of firm, and (g) firm's engagement in global operations?	Items 1 through 9 and 10 through 25	- Chi-square (χ^2)
Question 5: Is there a relationship between the items on which training professionals base their perception of the impact of training on their firms' competitiveness and their (a) gender, (b) age, (c) number of years in current firm, (d) highest educational level, (e) type of firm, (f) size of firm, and (g) firm's engagement in global operations?	Items 1 through 9 and 17 through 25	- Chi-square (χ^2)
Question 6: Is there a relationship between training professionals' perceived involvement in the integration of training in their firms' business strategies and their perceived impact of training on their firms' competitiveness?	Items 1 through 9 and 17 through 25	- Spearman's correlation coefficient (r_s)

CHAPTER 4

RESEARCH RESULTS

Introduction

The problem of this study was to determine training professionals' perception of their awareness of and involvement in the integration of training in the firm's business strategies and the impact of training on the firm's competitiveness. Training, as one of the human resource practices, has been qualitatively and quantitatively established in literature to have a positive impact on organizational performance and competitiveness; nonetheless, the extent to which training is genuinely perceived and valued to be strategically important by the firm's top management is still questionable.

To address the problem of the study, non-experimental research design using online survey method for data collection was adapted. The target population included all training professionals who interacted on the American Society for Training and Development (ASTD) discussion boards located at http://community.astd.org and networked on Twitter, Facebook, and Linkedin. The target population was estimated at 32,501 in total; according to Isreal (1992), using a 95% confidence level and ± 5% confidence interval (e), the minimum sample size was calculated to be 395. Utilizing convenience sampling, a total number of 450 invitations soliciting participation in the survey were initiated.

There were 111 responses in total. However, some of the responses contained some missing data. For instance, some responses contained missing data on some questionnaire items and had complete data on other items. Therefore, although some

responses contained missing data, they were still included in the statistical analysis. The response rate was estimated at 24.66% -- total number of valid responses (111) divided by total number of invitations (450) multiplied by 100 -- [(111/450)*100 = 24.66%].

While the response rate of 24.66% was considered acceptable since the average estimate of response rate for online surveys is between 20% and 30% (Hamilton, 2003), the results were subject to non-response bias (due to lower response rate). The comparison of the mean rating of each item in the fifth section (items 10 through 16) and sixth section (items 17 through 25) of the first 20 responses and latest 20 responses was performed using the independent samples *t*-test. The *t*-test results did not show any systematic differences that might cause any major concerns or red flags.

This chapter provides the statistical descriptions of the participants and research results. The chapter is organized as (a) descriptive statistics of the participants, (b) descriptive statistics of types of training and training delivery formats offered in participants' firms, (c) information regarding characteristics of the participants' firms, and (d) research results according to research questions.

Participants' Characteristics

Table 4 provides a description of participant characteristics expressed statistically in frequency and percentage. Among the 111 participants, 48 (43.2%) and 63 (56.8%) were male and female, respectively. The largest categories of participant age were 41-50 (34 or 30.6%) and 51-60 (30 or 27%). As for the American Society for Training and Development (ASTD) membership, 49 (44.1%) of the participants identified themselves as national members, and 48 of the participants were members of the ASTD's local

Table 4

Participant Characteristics

Characteristics	n	%
Gender:		
Male	48	43.2
Female	63	56.8
Total	111	100.0
Age:		
21-30	9	8.2
31-40	25	22.5
41-50	34	30.6
51-60	30	27.0
61-70	9	8.1
No Response	4	3.6
Total	111	100.0
ASTD Membership:		
National Member	49	44.1
Local Member:		
California	5	4.5
Florida	4	3.6
Georgia	1	0.9
Idaho	9	8.1
Illinois	7	6.3
Indiana	2	1.8
Louisiana	1	0.9
Massachusetts	1	0.9
Michigan	1	0.9
Minnesota	1	0.9
Missouri	2	0.8
Nebraska	1	0.9
New Jersey	2	1.8
New York	1	0.9
North Carolina	2	1.8
Ohio	1	0.9
Oklahoma	1	0.9
South Dakota	1	0.9
Texas	3	2.7

Table Continues

Table 4 (Continued)

Characteristic	n	%
Washington	2	1.8
Total	48	43.2
Non-ASTD Member	14	12.6
Total	111	100.0
Position/Job Title:		
Trainer	13	11.7
Training Consultant	19	17.1
Training Director	18	16.2
Training Manager	30	27.0
Training Specialist	16	14.4
Others	15	13.5
Total	111	100.0
Tenure:		
1 – 5 Years	62	55.9
More than 5 Years	45	40.5
No Response	4	3.6
Total	111	100.0
Highest Level of Education:		
High School Diploma	4	3.6
Associate Degree	1	0.9
Bachelorette	37	33.3
Master's	56	50.5
Doctorate	13	11.8
Total	111	100.0
Major:		
Education	36	32.4
Business	17	15.3
HRD/ODS (Organizational Development Studies)	25	22.5
Majors Related to Liberal Arts	20	18.0
High School Diploma	4	3.6
Others	7	6.3
No Response	2	1.8
Total	111	100.0

chapters in 20 different U.S. states; Idaho and Illinois had the highest numbers (9 and 7, respectively) of participants who were members of ASTD's local chapters. The high number of responses from Idaho might be due to the fact that several participants residing in that state knew the investigator. For Illinois, the high number of responses might be due to the fact that Southern Illinois University Carbondale is located in the state of Illinois. Regarding the job title, 30 (27%) of the participants were training managers. In respect to working experience, 45 (40.5%) of the participants indicated that they had worked for their current firms for more than 5 years. For education, 56 (50.5%) of the participants held Master's degrees; 13 (11.79%) held doctoral degrees; and 36 (32.4%) of the participants had a major in education.

Types of Training and Training Delivery Formats in Participants' Firms

Types of training and training delivery formats offered in participants' respective firms are shown in Table 5. The professional/industry-specific training was the most frequently identified (k = 89; 15.1%) as the type of training offered in participants' firms. The virtual classroom was the least frequently (k = 60; 24.2%) used format.

Characteristics of Participants' Firms

The characteristics of participants' firms are exhibited in Table 6. The participants' firms were grouped into three industries – service, retailing, and manufacturing; 74 (66.7%) of the firms were service-based. In addition, a large number of participants were employed in large firms (61 or 55%). The firms were categorized into three groups: small (100 or less employees), medium (101-1000 employees), and

Table 5

Types of Training and Training Delivery Formats Offered in Participants' Firm

Types of Training and Training Delivery Formats	k	%
Types of Training:		
Profession/Industry-Specific Training	89	15.1
Mandatory/Compliance Training	73	12.4
Sales Training	50	8.5
Management/Supervisory Training	79	13.4
Interpersonal/Soft Skills Training	80	13.6
IT/Systems Training	64	10.9
Customer Service Training	58	9.9
Executive Development Training	45	7.7
Desktop Application Training	46	7.8
Others	04	0.7
Total	588	100.0
Training Delivery Formats		
Instructor-Led Classroom	106	42.7
Online Self-Study	73	29.4
Virtual Classroom	60	24.2
Others	09	3.6
Total	248	100.0

Note: k is the total number of frequencies of the types of training and training delivery formats offered in participants' firms as reported by participants.

Table 6

Characteristics of Participants' Firms

Characteristics of Participants' Firms	n	%
Industry:		
Service	74	66.7
Retailing	10	9.0
Manufacturing	25	22.5
No Response	02	1.8
Total	111	100.0

Table Continues

Table 6 (Continued)

Characteristics of Participants' Firms	n	%
Size:		
Small (100 or Less Employees)	26	23.4
Medium (101-1000 Employees)	20	18.0
Large (1001 or More Employees)	61	55.0
No Response	04	3.6
Total	111	100.0
Engagement in Global Operations:		
Yes	58	52.3
No	51	45.9
No Response	2	1.8
Total	111	100.0

large (1001 or more employees). There were 26 (23.4%) small firms. In addition, 58 (52.3%) of the participants' firms were engaged in global operations.

Results According to Research Questions

Research Question 1: What Is the Training Professionals' Level of Perceived Awareness of the Integration of Training in Their Firms' Business Strategies?

This question asked the participants to rate the level of their awareness of the integration of training in their firms' business strategies. Table 7 provides statistical information regarding the participants' awareness level of the integration of training in their firms' business strategies. The business strategies identified for this study were *differentiation, cost leadership, focus, market penetration, product/service development, market development, and diversification* strategies. The *differentiation, cost leadership, focus* strategies are Porter's (1980) generic strategies, and the *market penetration,*

product/service development, market development, and diversification strategies are Ansoff's (1957) growth strategies.

Fifty-one (45.9%) of the participants indicated that they understood the integration of training in their firms' differentiation strategy in depth. However, 40 (36%) of the participants were not aware of the integration of training in their firms' market development strategy; and 34 (30.6%) of the participants were not aware of the integration of training in their firms' diversification strategy. Based on the highest rating of 3, the participants' mean awareness level of the integration of training in their firms' strategies was 2.04 (differentiation strategy), 1.66 (cost leadership strategy), 1.65 (focus strategy), 1.56 (market penetration strategy), 1.69 (product/service development strategy), 1.38 (market development strategy), and 1.38 (diversification strategy).

Research Question 2: What Is the Perceived Involvement of Training Professionals Regarding the Integration of Training in Their Firms' Business Strategies?

This question asked the participants to rate their personal involvement regarding the integration of training in their firm's business strategies. The results are presented in Table 8. Twenty-eight (25.2%) of the 111 participants were very highly involved in the integration of training in their firms' differentiation strategy, and 26 (23.4 %) of all the participants were moderately involved in the integration of training in their firms' cost leadership strategy. Seven (6.3%) of the participants indicated that they had a very low involvement in the integration of training in the firms' focus strategy. Likewise, 6 (5.4%) of the participants reported a low involvement in the integration of training in their firms' market penetration strategy. Furthermore, 26 (23.4%) participants reported very high involvement in the integration of training in their firms' produce/service development. In

addition, 20 (18%) participants moderately rated their involvement in the integration of training in their firms' market development strategy. Nineteen (17.1%) of the participants reported that their involvement in the integration of training in their firms' diversification was low. Moreover, based on the highest rating of 5, the mean ratings of the participants' involvement in the integration of training in their firms' business strategies were 3.59 (differentiation), 3.24 (cost leadership), 3.53 (focus), 3.45 (market penetration), 3.46 (product/service development), 3.25 (market development), and 2.86 (diversification).

Research Question 3: What Is the Perceived (a) Impact of Training on the Competitiveness of Training Professionals' Firms, and (b) on What is the Perception Based?

This question consists of two parts. The first part of this question asked participants to perceptually rate the impact of training on each measure of their firms' competitiveness, and the second part asked participants to provide the bases, on which they perceived the impact of training. Table 9 shows the participants' rating of the impact of training on each measure of their firms' competitiveness. Forty-three (38.7%) of the participants indicated that training contributed very highly to the improvement of their firms' readiness for current and future business opportunities and threats, and 42 (37.8%) participants reported that training contributed very highly to their firms' productivity. Thirty-four (34.3%) of the participants perceived that training contributed very highly to their firms' efficiency. Only 6 (5.4%) of the participants perceived that training had a very low contribution to their firms differentiation in the marketplace. Likewise, 11 (9.9%) of the participants perceptually judged that training had a low contribution to the improvement of the design and development of their firms' new products/services.

Table 7

Participants' Awareness Level of the Integration of Training in Their Firms' Business Strategies

Strategies	3 (Yes)		2 (Yes)		1 (Yes)		0 (No)		No Response		Total		Mean (n)
	n	%	n	%	n	%	n	%	n	%	n	%	
Differentiation	51	45.9	26	23.4	17	15.3	15	13.5	02	01.8	111	100	2.04 (109)
Cost Leadership	36	32.4	25	22.5	21	18.9	26	23.4	03	02.7	111	100	1.66 (108)
Focus	36	32.4	27	24.3	16	14.4	29	26.1	03	02.7	111	100	1.65 (108)
Market Penetration	35	31.5	26	23.4	11	9.9	36	32.4	03	02.7	111	100	1.56 (108)
Product/Service Development	39	35.1	25	22.5	16	14.4	28	25.2	03	02.7	111	100	1.69 (108)
Market Development	29	26.1	23	20.7	16	14.4	40	36.0	03	02.7	111	100	1.38 (108)
Diversification	28	25.2	19	17.1	27	24.3	34	30.6	03	02.7	111	100	1.38 (108)
Crombach's α (alpha)				.929									

Note:
0 = NO, I am not aware.
1 = YES, I am aware but do not know the details.
2 = YES, I have some understanding of the integration of training in the strategy.
3 = YES, I understand the integration of training in the strategy in depth.

Nine (8.1%) of the participants identified that training had a very low contribution to the effective introduction of their firm's new products/services to the market. Moreover, 7 (6.3%) of the participants determined that training had a very low contribution to the effective introduction of new business processes in their firms; 32 (28.8%) participants indicated that training highly contributed to the improvement of their firms' current products/services. Based on their rating, 35 (31.5%) participants expressed that training contributed very highly to the improvement of current business processes in their firms. The participants' mean ratings of the impact of training on measures of their firms' were 3.68 (readiness for new opportunities and threats), 3.85 (productivity), 3.71 (efficiency), 3.18 (differentiation), 2.66 (new product/service design), 2.87 (introduction of new product/service to the market), 3.30 (introduction of new business processes), 3.45 (current product/service improvement), and 3.34 (current business process improvement).

The bases on which the participants perceived the impact of training on each measure of their firms' competitiveness are presented in Table 10. The participants were most frequently based on their communication with colleagues and management team (k = 82; 26.6%) regarding their perception of the extent to which training contributed to the improvement of their firms' readiness for current and future business opportunities and threats. In addition, communication with colleagues and management team was also the most frequently identified basis on which the participants based their perceptual judgment of the impact of training on productivity (k = 77; 27.1%), efficiency (k = 83; 28.3%), differentiation (k = 68; 28.3%), new product/service design (k = 61; 29.6%), introduction of new product/service to the market (k = 61; 28.4%), introduction

Table 8

Participants' Involvement in the Integration of Training in Their Firms' Business Strategies

Strategies	5 (Very High)		4 (High)		3 (Moderate)		2 (Low)		1 (Very Low)		No Response		Total		Mean (n)
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	
Differentiation	28	25.2	23	20.7	23	20.7	11	09.9	07	06.3	19	17.1	111	100	3.59 (92)
Cost Leadership	18	16.2	17	15.3	26	23.4	13	11.7	10	09.0	27	24.3	111	100	3.24 (84)
Focus	23	20.7	18	16.2	23	20.7	08	07.2	07	06.3	32	28.8	111	100	3.53 (79)
Market Penetration	19	17.1	16	14.4	22	19.8	06	05.4	08	07.2	40	36.0	111	100	3.45 (71)
Product/Service Development	26	23.4	15	13.5	14	12.6	17	15.3	07	06.3	32	28.3	111	100	3.46 (79)
Market Development	16	14.4	12	10.8	20	18.0	13	11.7	07	06.3	43	38.7	111	100	3.25 (68)
Diversification	14	12.6	09	08.1	17	15.3	19	17.1	14	12.6	38	34.2	111	100	2.86 (73)
Crombach's α (alpha)						.930									

of new business processes (k = 76; 30.2%), current product/service improvement (k = 79; 29.8%), and current business process improvement (k = 73; 28.1%).

Research Question 4: Is There a Relationship between the Perceived Impact of Training on the Competitiveness of Training Professionals' Firms and Their (a) Gender, (b) Age, (c) Number of Years in Current Firm, (d) Highest Educational Level, (e) Type of Firm, (f) Size of Firm, (g) Firm's Engagement in Global Operations?

The Chi-Square test of independence between variables requires at least five counts in each cell in a cross-tab formation. As a result, to perform a meaningful statistical analysis in order to answer this question, modification of the actual data was required.

Therefore, the ratings of the impact of training on each measure of the firm's competitiveness were clustered into two groups. The ratings of 0 (N/A), 1 (Very low), 2 (Low), and 3 (Moderate) were included the low impact group. The high impact group consisted of the ratings of 4 (high) and 5 (very high).

As for the participants' demographic characteristics, the ages of the participants were divided into three groups. Group 1 included all the participants who were between 30 years of age or younger; group 2 consisted of all the participants who were between 31 and 44 years old; and the participants who were 45 years of age or older were included in group 3. The participants' years working for their current firms were organized into two groups. Group 1 contained participants who had 1 to 5 years of working experience for their current firms, and group 2 included all the participants who had more than five years of experience working for their current firms. The participants' education levels were grouped into two groups. Group 1 consisted of the participants who had a bachelor's

degree, an associate's degree, or a high school diploma. The participants who had a master or doctoral degree were placed in group 2.

For the participants' firms' characteristics, three groups (types) of firms – service, retailing, and manufacturing – were identified. The sizes of the participants' firms were also classified: small (100 or less employees), medium (101-1,000 employees), and large (1,001 or more employees). As for the engagement in global operation, the participants' firms were divided into two groups. Group 1 contained all the firms that were not engaged in global operation, and group 2 contained all the firms that had an engagement in global operation.

As shown in Table 11a, there was no statistically significant relationship between the perceived impact of training on each measure of the competitiveness of the participants' firms and their gender, age, years of working experience in their current firms, or educational level. All the p-values were larger than .05. Table 11b presents the results of the Chi-Square tests of independence between training professionals' perceptions of the impact of training on the firm's competitiveness and their firms' characteristics. There was a statistically significant relationship between the participants' firm sizes and the extent to which training contributed to (a) the improvement of the participants' firms' new product/service design, $\chi^2(2, N = 107) = 10.36$, $p = .005$, (b) effective introduction of the participants' firms' new product/service to the market, $\chi^2(2, N = 107) = 6.75$, $p = .034$, and (c) improvement of the participants' firms' current product/service, $\chi^2(2, N = 107) = 6.70$, $p = .035$.

Table 9

Participants' Rating of the Impact of Training on Measures of Their Firms' Competitiveness

Measures of Competitiveness	5 (Very High)		4 (High)		3 (Moderate)		2 (Low)		1 (Very Low)		N/A		No Response		Total		Mean (n)
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	
FC1	43	38.7	21	18.9	26	23.4	08	07.2	4	03.6	06	05.4	03	02.7	111	100	3.68 (108)
FC2	42	37.8	33	29.7	18	16.2	06	05.4	4	03.6	04	03.6	04	03.6	111	100	3.85 (107)
FC3	37	33.3	33	29.7	22	19.8	07	06.3	4	03.6	05	04.5	03	02.7	111	100	3.71 (108)
FC4	34	30.6	22	19.8	17	15.3	14	12.6	6	05.4	15	13.5	03	02.7	111	100	3.18 (107)
FC5a	25	22.5	16	14.4	19	17.1	11	09.9	17	15.3	19	17.1	04	03.6	111	100	2.66 (107)
FC5b	31	27.9	19	17.1	16	14.4	09	08.1	10	09.0	22	19.8	04	03.6	111	100	2.87 (107)
FC5c	34	30.6	22	19.8	24	21.6	08	07.2	7	06.3	12	10.8	04	03.6	111	100	3.30 (107)
FC5d	31	27.9	32	28.8	24	21.6	03	02.7	8	07.2	09	08.1	04	03.6	111	100	3.45 (107)
FC5e	35	31.5	20	18.0	26	23.4	09	08.1	6	05.4	11	09.9	04	03.6	111	100	3.34 (107)
Crombach's α (alpha)						.922											

Note:
FC1 = Readiness for New Opportunities and Threats
FC2 = Productivity
FC3 = Efficiency
FC4 = Differentiation
FC5a = New Product/Service Design
FC5b = Introduction of New Product/Service to the Market
FC5c = Introduction of New Business Processes
FC5d = Current Product/Service Improvement
FC5e = Current Business Process Improvement
N/A = No Answer (No Impact)

Table 10

The Bases on Which the Participants Perceived the Impact of Training on Each Measure of Their Firms' Competitiveness

Bases of the Impact	FC1 (n = 108)		FC2 (n = 107)		FC3 (n = 108)		FC4 (n = 108)		FC5 (n = 107)		FC6 (n = 107)		FC7 (n = 107)		FC8 (n = 107)		FC9 (n = 107)	
	k	%	k	%	k	%	k	%	k	%	k	%	k	%	k	%	k	%
Training Evaluation	66	21.4	65	22.9	53	18.1	38	15.8	31	15	36	16.7	49	19.4	51	19.2	49	18.8
Executive Report	36	11.7	36	12.7	42	14.3	39	16.2	25	12.1	31	14.4	31	12.3	32	12.1	37	14.2
Communication*	82	26.6	77	27.1	83	28.3	68	28.3	61	29.6	61	28.4	76	30.2	79	29.8	73	28.1
Observation	77	25.0	72	25.4	80	27.3	63	26.2	60	29.1	56	26	62	24.6	70	26.4	63	24.2
Meeting	37	12.0	29	10.2	30	10.2	25	10.4	22	10.7	22	10.2	27	10.7	26	09.8	31	11.9
Other	10	03.2	5.0	1.80	5.0	01.7	07	02.9	07	03.4	09	04.2	07	02.8	07	02.6	07	02.7
Total	308	100	284	100	293	100	240	100	206	100	215	100	252	100	265	100	260	100

Note:
* Communication with colleagues and management team
FC1 = Readiness for New Opportunities and Threats
FC2 = Productivity
FC3 = Efficiency
FC4 = Differentiation
FC5a = New Product/Service Design
FC5b = Introduction of New Product/Service to the Market
FC5c = Introduction of New Business Processes
FC5d = Current Product/Service Improvement
FC5e = Current Business Process Improvement
k = Total Number of Bases Identified by n Participants for Each Measure of the Firm's Competitiveness

Research Question 5: Is There a Relationship between the Items on Which Training Professionals Base Their perception of the Impact of Training on Their Firms' Competitiveness and Their (a) Gender, (b) Age, (c) Number of Years in Current Firm, (d) Highest Educational Level, (e) Type of Firm, (f) Size of Firm, (g) Firm's Engagement in Global Operations?

The items on which the participants based their perception of the impact of training on their firms' competitiveness included *training evaluation, executive report, communication with colleagues and management team, observation, meeting, and others* as identified by the participants. Almost all the participants identified more than one item as the bases on which they based their perception of the impact of training on each measure of their firms' competitiveness; consequently, it was not feasible to determine which one item they relied on the most in regard to their perception of the impact of training on each measure of the competitiveness. Thus, the relationship between the items on which the participants based their perception of the impact of training on each measure of their firms' competitiveness and their demographic and firms' characteristics could not be analyzed in a meaningful manner.

However, across all measures of the firms' competitiveness, it was possible to determine the item which was most frequently identified by a particular participant. Therefore, the item, which was most frequently identified by a participant as the basis on which he/she based his/her perception of the impact of training across all measures of his/her firm's competitiveness was selected as the basis on which that particular participant based his/her perception in respect to his/her perceptual judgment of the impact of training on his/her firm's competitiveness. After running this procedure,

meeting, one of the bases, was not present. The items which were most frequently identified by all the participants as the bases on which they based their perception of the impact of training on their firms' competitiveness were *training evaluation, executive report, communication with colleagues and management team, observation, and others*.

Furthermore, necessary modification of the actual data was made in order to meet the assumption of the Chi-Square test of independence among variables. As a result, nine sets of the bases were constructed. Each set contained two groups of bases. B_1, B_2, B_3, B_4, and B_0 represent *training evaluation, executive report, communication with colleagues and management team, observation, and others, respectively*. The nine sets were labeled as SET-1 (Group 1 = B_1 and B_o; Group 2 = B_2, B_3, and B_4), SET-2 (Group 1 = B_1 and B_2; Group 2 = B_3, B_4, and B_o), SET-3 (Group 1 = B_1 and B_3; Group 2 = B_2, B_4, and B_0), SET-4 (Group 1 = B_1 and B_4; Group 2 = B_2, B_3, and B_0), SET-5 (Group 1 = B_2 and B_3; Group 2 = B_1, B_4, and B_0), SET-6 (Group 1 = B_2 and B_4; Group 2 = B_1, B_3, and B_0), SET-7 (Group 1 = B_2 and B_o; Group 2 = B_1, B_3, and B_4), SET-8 (Group 1 = B_3 and B_4; Group 2 = B_1, B_2, and B_0), and SET-9 (Group 1 = B_4 and B_o; Group 2 = B_1, B_2, and B_3).

As shown in Table 12a, there was no statistically significant relationship between the sets of bases, on which the participants based their perception of the impact of training on their firms' competitiveness, and their demographic characteristics. All the p-values were larger than .05. As reported in Table 12b, there was a statistically significant relationship, $\chi^2(2, N = 109) = 7.37$, $p = .02$, between SET-4 (Group 1 = B_1 and B_4; Group 2 = B_2, B_3, and B_0) and the types of the participants' firms. However, there was no

Table 11a

Relationship between the Participants' Perception of the Impact of Training on the Firm's Competitiveness and Their Demographic Characteristics

Measures of the Firm's Competitiveness	Demographic Characteristics							
	Gender (column = 2)		Age (column = 3)		Tenure (column = 2)		Ed. Level (column = 2)	
	χ^2 (1)	*p*	χ^2 (2)	*p*	χ^2 (1)	*p*	χ^2 (1)	*p*
FC1 G1 = Low Impact G2 = High Impact	2.48	.115	1.55	.461	0.81	.366	0.06	.795
FC2 G1 = Low Impact G2 = High Impact	0.60	.437	4.73	.094	2.48	.115	0.23	.632
FC3 G1 = Low Impact G2 = High Impact	0.33	.563	0.49	.782	0.03	.954	1.94	.163
FC4 G1 = Low Impact G2 = High Impact	0.03	.852	0.65	.722	2.98	.084	1.10	.294
FC5a G1 = Low Impact G2 = High Impact	0.36	.548	3.98	.136	0.35	.550	1.40	.236
FC5b G1 = Low Impact G2 = High Impact	3.17	.075	0.92	.630	0.25	.613	0.37	.539
FC5c G1 = Low Impact G2 = High Impact	0.00	.983	0.31	.856	0.21	.640	0.81	.36
FC5d G1 = Low Impact G2 = High Impact	1.40	.236	1.63	.278	0.44	.505	1.12	.289
FC5e G1 = Low Impact G2 = High Impact	0.91	.340	0.29	.864	0.02	.877	1.10	.294

Note:
FC1 = Readiness for New Opportunities and Threats
FC2 = Productivity
FC3 = Efficiency
FC4 = Differentiation

FC5a = New Product/service Design
FC5b = Introduction of New Product/service to the Market
FC5c = Introduction of New Business Processes
FC5d = Current Product/Service Improvement
FC5e = Current Business Process Improvement
G1 = Group 1 - Low Impact [Rating of N/A (0), 1 (Very Low), 2 (Low), and 3 (Moderate)]
G1 = Group 2 - High Impact [Rating of 4(High) and 5 (Very High)]
The degree of freedom is in the parentheses.

Table 11b

Relationship between the Participants' Perception of the Impact of Training on the Firm's Competitiveness and Their Firms' Characteristics

Measures of the Firm's Competitiveness	Firm Characteristics					
	Size (column = 3)		Global Operation (column = 2)		Industry (column = 3)	
	χ^2 (2)	*p*	χ^2 (1)	*p*	χ^2 (2)	*p*
FC1 G1 = Low Impact G2 = High Impact	0.40	.816	1.28	.258	4.45	.108
FC2 G1 = Low Impact G2 = High Impact	0.20	.904	4.10	.522	0.84	.655
FC3 G1 = Low Impact G2 = High Impact	1.49	.473	0.07	.780	2.87	.237
FC4 G1 = Low Impact G2 = High Impact	2.38	.304	1.21	.271	4.65	.097
FC5a G1 = Low Impact G2 = High Impact	10.36	.005	2.98	.084	0.98	.612
FC5b G1 = Low Impact G2 = High Impact	6.75	.034	.213	.644	0.57	.750
FC5c G1 = Low Impact G2 = High Impact	3.22	.199	0.23	.879	1.28	.527

Table Continues

Table 11b (Continued)

Measures of the Firm's Competitiveness	Firm Characteristics					
	Size (column = 3)		Global Operation (column = 2)		Industry (column = 3)	
	$\chi^2(2)$	*p*	$\chi^2(1)$	*p*	$\chi^2(2)$	*p*
FC5d G1 = Low Impact G2 = High Impact	6.70	.035	1.50	.221	0.59	.744
FC5e G1 = Low Impact G2 = High Impact	1.74	.419	0.00	.958	1.97	.373

Note: The degree of freedom is in the parentheses.

Table 12a

Relationship between Bases of the Participants' Perception of the Impact of Training on the Firm's Competitiveness and Their Demographic Characteristics

Bases of Impact	Demographic Characteristics							
	Gender (column = 2)		Age (column = 3)		Tenure (column = 2)		Ed. Level (column = 2)	
	$\chi^2(1)$	*p*	$\chi^2(2)$	*p*	$\chi^2(1)$	*p*	$\chi^2(1)$	*p*
SET-1 Group 1 = B_1, B_0 Group 2 = B_2, B_3, B_4	0.16	.684	1.03	.598	0.23	.585	0.00	1.00
SET-2 Group 1 = B_1, B_2 Group 2 = B_3, B_4, B_0	1.87	.171	.525	.769	0.14	.710	0.03	.954
SET-3 Group 1 = B_1, B_3 Group 2 = B_2, B_4, B_0	0.41	.521	2.10	.350	0.30	.585	0.33	.564
SET-4 Group 1 = B_1, B_4 Group 2 = B_2, B_3, B_0	0.48	.485	0.63	.728	1.57	.210	0.64	.421

Table Continues

Table 12a (Continued)

Bases of Impact	Demographic Characteristics							
	Gender (column = 2)		Age (column = 3)		Tenure (column = 2)		Ed. Level (column = 2)	
	χ^2 (1)	*p*	χ^2 (2)	*p*	χ^2 (1)	*p*	χ^2 (1)	*p*
SET-5 Group 1 = B_2, B_3 Group 2 = B_1, B_4, B_0	0.17	.678	1.38	.501	1.50	.220	1.40	.236
SET-6 Group 1 = B_2, B_4 Group 2 = B_1, B_3, B_0	3.50	.554	1.05	.591	0.37	.541	0.66	.416
SET-7 Group 1 = B_2, B_0 Group 2 = B_1, B_3, B_4	0.69	.405	1.52	.467	0.10	.749	0.15	.699
SET-8 Group 1 = B_3, B_4 Group 2 = B_1, B_2, B_0	0.02	.873	1.04	.594	0.11	.739	0.01	.914
SET-9 Group 1 = B_4, B_0 Group 2 = B_1, B_2, B_3	1.64	.200	1.34	.510	0.62	.429	0.52	.468

Note:
B_0 = Others
B_1 = Training Evaluation
B_2 = Executive Report
B_3 = Communication with Colleagues and Management Team
B_4 = Observation

statistically significant relationship between the rest of the sets of bases and the participants' firms' characteristics; the p-values were larger than .05.

Table 12b

Relationship between Bases of the Participants' Perception of the Impact of Training on the Firm's Competitiveness and Their Firms' Characteristics

Bases of Impact	Firm Characteristics					
	Size (column = 3)		Global Operation (column = 2)		Industry (column = 3)	
	χ^2 (2)	*p*	X^2 (1)	*p*	χ^2 (2)	*p*
SET-1 Group 1 = B_1, B_0 Group 2 = B_2, B_3, B_4	1.52	.467	0.06	.798	2.22	.329
SET-2 Group 1 = B_1, B_2 Group 2 = B_3, B_4, B_0	2.53	.282	0.20	.651	5.32	.070
SET-3 Group 1 = B_1, B_3 Group 2 = B_2, B_4, B_0	1.25	.533	1.64	.200	0.01	.993
SET-4 Group 1 = B_1, B_4 Group 2 = B_2, B_3, B_0	2.24	.325	0.17	.679	7.37	.020
SET-5 Group 1 = B_2, B_3 Group 2 = B_1, B_4, B_0	0.96	.618	0.47	.490	3.96	.138
SET-6 Group 1 = B_2, B_4 Group 2 = B_1, B_3, B_0	1.35	.509	1.29	.256	2.01	.365
SET-7 Group 1 = B_2, B_0 Group 2 = B_1, B_3, B_4	0.69	.405	1.52	.467	0.10	.749
SET-8 Group 1 = B_3, B_4 Group 2 = B_1, B_2, B_0	0.99	.607	0.51	.472	2.51	.285
SET-9 Group 1 = B_4, B_0 Group 2 = B_1, B_2, B_3	0.85	.653	0.69	.404	0.27	.871

Note:

B_0 = Others

B_1 = Training Evaluation

B_2 = Executive Report

B_3 = Communication with Colleagues and Management Team

B_4 = Observation

Research Question 6: Is There a Relationship between Training Professionals' Perceived Involvement in the Integration of Training in Their Firms' Business Strategies and Their Perceived Impact of Training on Their Firm's Competitiveness?

As shown in Table 13a, there was a linear positive relationship between training professionals' perceived involvement in the integration of training in each of their firms' business strategies and their perceived impact of training on each measure of their firms' competitiveness. Almost all of the relationships were statistically significant at the .01 level.

In addition, the mean ratings of each participant's reported involvement in the integration of training in their firms' generic strategies (as defined by Porter) and growth strategies (as defined by Ansoff) were respectively calculated. Table 13b shows correlation coefficients between training professionals' perceived involvement in the integration of training in their firms' generic strategies, growth strategies, and their perceived impact of training on each measure of their firm's competitiveness. All the correlation coefficients were positive and statistically significant at the .01 level.

Furthermore, the mean rating of each participant's perceived impact of the training on all measures of his/her firm's competitiveness was computed. Also, the mean rating of each participant's reported involvement in the integration of training in their firms' combined generic strategies and growth strategies was calculated.

Then, the set of mean ratings of the participants' perceived impact of the training on all measures of their firms' competitiveness was correlated with the sets of mean ratings of the participants' reported involvement in the integration of training in

Table 13a

Relationship between the Participants' Perceived Involvement in the Integration of Training in Their Firms' Business Strategies and Their Perceived Impact of Training on Each Measure of Their Firm's Competitiveness

Strategies	FC1		FC2		FC3		FC4		FC5a		FC5b		FC5c		FC5d		FC5e	
	n	r_s	n	r_s	n	r_s	n	r_s	n	r_s	n	r_s	n	r_s	n	r_s	n	r_s
Differentiation	92	.58**	91	.54**	92	.37**	92	.47**	91	.39**	91	.43**	91	.40**	91	.51**	91	.36**
Cost Leadership	84	.45**	83	.36**	84	.30	84	.38**	83	.38**	83	.37**	83	.36**	83	.36**	83	.28*
Focus	79	.50**	79	.38**	79	.27*	79	.52**	79	.45**	79	.53**	79	.43**	79	.42**	79	.33**
Market Penetration	71	.43**	70	.24**	71	.18	71	.48**	70	.49**	70	.52**	70	.48**	70	.49**	70	.25*
Product Development	79	.34**	78	.43**	79	.23*	79	.41**	78	.51**	78	.48**	78	.35**	78	.51**	78	.28*
Market Development	68	.35**	67	.34**	68	.13	68	.36**	67	.57**	67	.46**	67	.34**	67	.41**	67	.18
Diversification	73	.42**	72	.43**	73	.29*	73	.46**	72	.64**	72	.53**	72	.49**	72	.67**	72	.43**

Note:
FC1 = Readiness for New Opportunities and Threats
FC2 = Productivity
FC3 = Efficiency
FC4 = Differentiation
FC5a = New Product/Service Design
FC5b = Introduction of New Product/service to the Market
FC5c = Introduction of New Business Processes
FC5d = Current Product/Service Improvement
FC5e = Current Business Process Improvement
n = Number of cases used in the correlation
r_s = Spearman's rank correlation coefficient
**Correlation is significant at the .01 level
*Correlation is significant at the .05 level

Table 13b

Relationship between the Participants' Perceived Involvement in the Integration of Training in Their Firms' Porter's Generic Strategies, Ansoff's Growth Strategies, and Their Perceived Impact of Training on Each Measure of Their Firm's Competitiveness

Strategies	FC1		FC2		FC3		FC4		FC5a		FC5b		FC5c		FC5d		FC5e	
	n	r_s	n	r_s	n	r_s	n	r_s	n	r_s	n	r_s	n	r_s	n	r_s	n	r_s
Porter's Strategies (Differentiation, Cost Leadership, and Focus Strategies)	96	.55**	95	.49**	96	.35**	96	.49**	95	.43**	95	.46**	95	.45**	95	.50**	95	.37**
Ansoff's Strategies (Market Penetration, Product/Service Development, Market Development, and Diversification Strategies)	90	.32**	89	.37**	90	.21**	90	.42**	89	.53**	89	.52**	89	.43**	89	.54**	89	.28**

Note:
n = Number of cases used in the correlation
r_s = Spearman's rank correlation coefficient
**Correlation is significant at the .01 level

Table 13c

Relationship between the Participants' Perceived Involvement in the Integration of Training in Their Firms' Business Strategies and Their Perceived Impact of Training on Their Firms' Competitiveness

Strategies	The Firm's Competitiveness	
	n	r_s
Porter's Generic Strategies (Differentiation, Cost Leadership, and Focus Strategies)	96	.570**
Ansoff's Growth Strategies (Market Penetration, Product/Service Development, Market Development, Diversification Strategies)	90	.546**
Combined Porter's Generic Strategies and Ansoff's Growth Strategies	98	.576**

**Correlation is significant at the .01 level

their firms' Porter's generic strategies, Ansoff's growth strategies, and combined Porter's generic and Ansoff's strategies. The results are shown in Table 13c. The correlation coefficients between the set of the mean ratings of the participants' perceived impact of the training on all measures of their firms' competitiveness and the sets of the mean ratings of the participants' reported involvement in the integration of training in their firms' Porter's generic strategies, Ansoff's growth strategies, and combined Porter's generic and Ansoff's strategies were .570, .546, and .576, respectively. The correlation coefficients were statistically significant at the .01 level.

CHAPTER 5

SUMMARY, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

Summary of Research

Operating in the knowledge-based economy, firms rely heavily on the skills and knowledge of their employees to generate competitive advantage (Porter, 2000). According to Porter (1998), a firm has a competitive advantage when (a) it is able to generate and sustain profits that are greater then the average for its industry, (b) it manages to deliver the same benefits as its rivals but at a lower cost, and (c) it delivers benefits that exceed those of competing products by differentiating itself in the industry.

Training, one of the human resource practices, has traditionally been a conventional method utilized by virtually every firm, big and small, to prepare and arm both current and new employees with necessary and relevant knowledge and skills to perform day-to-day operational activities that ultimately determine organizational performance, success, and competitiveness. Although training has been qualitatively and quantitatively established in literature to have a positive impact on organizational performance and competitiveness, the extent to which training is genuinely perceived and valued to be strategically important by the firm's top management is still questionable.

The purpose of the present study was to contribute to a greater understanding of the strategic role of training and training professionals in firms that are operating and competing in the knowledge-based economy. In particular, the study sought to gain insightful knowledge of training professionals' perception of their strategic role and how their job activities contribute to enhancing their firms' competitiveness.

The problem of this study was to determine training professionals' perceptions of their awareness of and involvement in the integration of training in the firm's business strategies and the impact of training on the firm's competitiveness. To address the problem of the study, a non-experimental research design using online survey method for data collection was implemented.

The target population included all training professionals who interacted on the American Society for Training and Development (ASTD) discussion boards located at http://community.astd.org and networked on Twitter, Facebook, and Linkedin. The target population was estimated at 6,450 in total; according to Isreal (1992), using a 95% confidence level and ± 5% confidence interval (e), the minimum sample size was calculated to be 376. The minimum sample size was required to stratify the assumption of the statistics used to answer the research questions. Utilizing a convenience sample, a total number of 450 invitations soliciting participation in the survey were initiated; 111 responses were received, resulting in a response rate of 24.66%.

Since the response rate was low, the results were subject to non-response bias. The comparison of the mean rating of each item in the fifth section (items 10 through 16) and sixth section (items 17 through 25) of the first 20 responses and the 20 latest responses was performed using the independent samples *t*-test. The *t*-test results did not show any systematic differences that might cause any major concerns or red flags.
The next sections provide a summary of the research findings according to research questions, followed by conclusions, discussion, and recommendations for practice and future research.

Summary of Findings

Research Question 1: What Is the Training Professionals' Level of Perceived Awareness of the Integration of Training in Their Firms' Business Strategies?

The statistical information regarding the participants' awareness level of the integration of training in their firms' business strategies showed a division of awareness levels. More than half of the participants indicated that they either had some understanding of or understood in depth the integration of training in their firms' business strategies. Based on the highest rating of 3, the participants' mean ratings of their awareness of the integration of training in their firms' strategies were 2.04 (differentiation strategy), 1.66 (cost leadership strategy), 1.65 (focus strategy), 1.56 (market penetration strategy), 1.69 (product/service development strategy), 1.38 (market development strategy), and 1.38 (diversification strategy).

Research Question 2: What Is the Perceived Involvement of Training Professionals Regarding the Integration of Training in Their Firms' Business Strategies?

More than 50% of the participants either reported moderate, high, or very high involvement in the integration of training in their firms' business strategies. Based on the highest rating of 5, the mean ratings of the participants' involvement in the integration of training in their firms' business strategies were 3.59 (differentiation strategy), 3.24 (cost leadership strategy), 3.53 (focus strategy), 3.45 (market penetration strategy), 3.46 (product/service development strategy), 3.25 (market development strategy), and 2.86 (diversification strategy).

Question 3: What Is the Perceived (a) Impact of Training on the Competitiveness of Training Professionals' Firms, and (b) on What is the Perception Based?

This question consists of two parts. The first part of this question asked participants to perceptually rate the impact of training on each measure of their firms' competitiveness. The second part asked participants to provide the bases on which they based on their perception.

Participants' mean ratings of the impact of training on measures of their firms' competitiveness were 3.68 (readiness for new opportunities and threats), 3.85 (productivity), 3.71 (efficiency), 3.18 (differentiation), 2.66 (new product/service design), 2.87 (introduction of new product/service to the market), 3.30 (introduction of new business processes), 3.45 (current product/service improvement), and 3.34 (current business process improvement) based on the highest rating of 5. In addition, the majority of the participants either rated the impact of training on measures of their firms' competitiveness moderate, high, or very high. Finally, the participants indicated that they were most frequently based on their communication with colleagues and management team in respect to their perceptual judgment of the impact of training on measures of their firms' competitiveness.

Research Question 4: Is There a Relationship between the Perceived Impact of Training on the Competitiveness of Training professionals' Firms and Their (a) Gender, (b) Age, (c) Number of Years in Current Firm, (d) Highest Educational Level, (e) Type of Firm, (f) Size of Firm, (g) Firm's Engagement in Global Operations?

As shown in Table 9a, there was no statistically significant relationship between the perceived impact of training on any measure of the competitiveness of the

participants' firms and their gender, age, years of working experience in their current firms, and educational level. All the p-values were larger than .05. A statistically significant relationship existed between the participants' firm sizes and the extent to which training contributed to (a) the improvement of the participants' firms' new product/service design, (b) effective introduction of the participants' firms' new product/service to the market, and (c) improvement of the participants' firms' current product/service.

Research Question 5: Is There a Relationship between the Items on which Training Professionals Base Their perception of the Impact of Training on Their Firms' Competitiveness and Their (a) Gender, (b) Age, (c) Number of Years in Current Firm, (d) Highest Educational Level, (e) Type of Firm, (f) Size of Firm, (g) Firm's Engagement in Global Operations?

No statistically significant relationship existed between the sets of bases on which the participants based their perception of the impact of training on their firms' competitiveness, and their demographic characteristics. A statistically significant relationship was found between SET-4 (Group 1 = *training evaluation* and *observation*; Group 2 = *executive report*, *communication with colleagues and management team*, and *others*) and the types of the participants' firms. However, there was no statistically significant relationship between the rest of the sets of bases and the participants' firms' characteristics.

Research Question 6: Is There a Relationship between Training Professionals' Perceived Involvement in the Integration of Training in Their Firms' Business Strategies and Their Perceived Impact of Training on Their Firm's Competitiveness?

There was a linear positive relationship between training professionals' perceived involvement in the integration of training in each of their firms' business strategies and their perceived impact of training on each measure of their firms' competitiveness. Almost all of the correlation coefficients were statistically significant at the 0.01 level. Overall, the correlation coefficient between training professionals' perceived involvement in the integration of training in their firms' business strategies and their perceived impact of training on their firms' competitiveness was positive and statistically significant.

Conclusions and Discussions According to Research Questions

A total number of 111 participants who were training professionals employed in small, medium, and large firms across three different industries – service, retailing, and manufacturing – participated in the online survey. Based on the analysis of data obtained from the online survey, the conclusions are presented with discussion on related research questions and other related literature.

Research Question 1: What Is the Training Professionals' Level of Perceived Awareness of the Integration of Training in Their Firms' Business Strategies?

First of all, the majority of the participants are, to some extent, knowledgeable about the integration of training in their firms' business strategies. In addition, the business strategies identified in this study are actively pursued by the majority of the

participants' firms including small, medium, and large sizes from across three different industries – service, retailing, and manufacturing. Additionally it appears that the integration of training in the participants' firm strategies occurs in the majority of the participants' firms.

Although the integration of training in the firm's business strategies have been reported and advocated in other studies (Baker & Wooden, 1995; Bartel, 1994; Billet & Cooper, 1997; Catts, 1996; Chalkley, 1991; Coopers & Lybrand, 1994; Dockery, 2001; Kay et al., 1992; Ichniowski et al., 1996; Geisler & Justus, 1998; McClelland, 1994; Nathan & Stanleigh, 1991), none of these studies provided any specific information, suggestions, or empirical evidence of the integration of training in particular business strategies. Therefore, the findings of the current study significantly contribute to a greater understanding of the integration of training in the firm's specific business strategies.

Research Question 2: What Is the Perceived Involvement of Training Professionals Regarding the Integration of Training in Their Firms' Business Strategies?

Based on the analysis of the data regarding the participants' involvement in the integration of training in their firms' business strategies, it appears that the participants and their tasks were strategically valued [although not very highly] in their firms. This provides evidence of the integration of training in the firm's business strategies through the participants' reported involvement in the integration of training in their firms' business strategies.

The mean ratings indicated that the participants were not highly involved in the integration of training in their firms' business strategies. This is aligned with the notion

asserted by Barney and Wright (1998) that many organizational decisions indicated "a relative low priority on both the human resources of the firm and the Human Resource department" (p. 31). In addition, the findings support the trend that senior human resources and line managers undermine the role of human resources in improving performance (Gerhart & Milkovich, 1996).

Research Question 3: What Is the Perceived (a) Impact of Training on the Competitiveness of Training Professionals' Firms, and (b) on What is the Perception Based?

The findings indicate that the majority of the participants rated the impact of training on measures of their firms' competitiveness moderate, high, or very high. The participants' mean ratings of the impact of training on measures of their firms' were 3.68 (readiness for new opportunities and threats), 3.85 (productivity), 3.71 (efficiency), 3.18 (differentiation), 2.66 (new product/service design), 2.87 (introduction of new product/service to the market), 3.30 (introduction of new business processes), 3.45 (current product/service improvement), and 3.34 (current business process improvement). These results support other findings reported in the literature regarding the impact of training on measures of the firm's competitiveness.

First of all, the study supports the impact of training on firm's *readiness for new opportunities and threats* measure reported by other studies (CVG, 2004; Drost, 2002; Glaveli & Kufidu, 2005; PricewaterhouseCoopers, 1998) in the literature. The findings are also aligned with the findings reported in other studies (Bartel, 1994; Bishop, 1990; Booth 1991; Brown 1990; Dockery & Norris, 1996; Duncan & Hoffman 1996; Lillard & Tan, 1992; Loundes, 1999; Lynch, 1996; Mincer, 1993) regarding the impact of training

on the firm's *productivity*. Moreover, the findings of the current study support the findings of the impact of training on their firms' *efficiency* reported in the literature by Holzer, et al. (1993), Mullin (2003), CVG (2004), and NCVER (2002). Furthermore, the finding supports other studies (Edina, 2005; Kleinfelder, 2005) concerning the impact of training on the firm's *differentiation in the marketplace* presented by other studies in the literature. Finally, the findings support other findings (Baldwin, 1999, 2000; Baldwin & Johnson, 1996; Blundell, et al., 1999; Dockery, 2001; Frazis, Gittlemanm, & Joyce, 1998; Turcotte, 2002) reported in the literature regarding the impact of training on the firm's *innovation*. The findings uniquely contribute to a better understanding of the impact of training on the firm's innovation because in establishing a relationship between training and the firm's innovation, most of the studies in the literature treated innovation as a stand alone variable. However, the current study included five different variables to capture the firm's innovation.

Overall, it can be concluded that training professionals believe their activities contribute to the firm's competitiveness. In addition, the analysis of the data revealed that *communication with colleagues and management team* was the most frequently identified basis on which the participants based their perceptual judgment of the impact of training across all measures of their firms' competitiveness. The second most frequently identified basis was *observation*. This indicates that the participants may rely more frequently on informal (non-scientific and subjective) evaluations in judging the impact of training on their firms' competitiveness. The informal evaluation of the impact of training might be one of the reasons that the concept of numerator management termed by Hamel and Prahalad (1994) rarely considered human resources as a source of value

creation and that senior human resources and line managers undermined the role of human resources in improving performance and the business bottom lines (Becker & Gerhart, 1996).

Research Question 4: Is There a Relationship between the Perceived Impact of Training on the Competitiveness of Training professionals' Firms and Their (a) Gender, (b) Age, (c) Number of Years in Current Firm, (d) Highest Educational Level, (e) Type of Firm, (f) Size of Firm, (g) Firm's Engagement in Global Operations?

No statistically significant relationship was found between the participants' perception of the impact of training on their firm's competitiveness and their demographic characteristics. Therefore, it is maybe that the participants' perceptual judgment of the impact of training on measures of their firms' competitiveness is independent of their gender, age, years of working experience in their current firms, and educational level.

However, a statistically significant relationship was found between the participants' firm sizes and the extent to which training contributed to (a) the improvement of the participants' firms' new product/service design, (b) effective introduction of the participants' firms' new product/service to the market, and (c) improvement of the participants' firms' current product/service. The improvement of the participants' firms' new product/service design, effective introduction of the participants' firms' new product/service to the market, and improvement of the participants' firms' current product/service are three of the five variables capturing the firm's innovation. Other than the three measures of firm's innovation, it seems that the participants'

perception of the impact on measures of their firms' competitiveness is independent of their firms' type, size, and engagement in global operations.

While the association between training and innovation has been documented in the literature (Baldwin, 1999; Blundell, et al., 1999; Dockery, 2001; Frazis, Gittlemanm, & Joyce, 1998; Turcotte, 2002), the findings of the current study indicate an association between the participants' perception of the impact of training on their firms' innovation and their firm sizes. As a result, it appears that the extent to which the participants perceived the impact of training on the firm's innovation was dependent on their firms' sizes, providing a better understanding of the relationship between the impact of training on the firm's innovation and the firm size.

Research Question 5: Is There a Relationship between the Items on which Training Professionals Base Their Perception of the Impact of Training on Their firms' Competitiveness and Their (a) Gender, (b) Age, (c) Number of Years in Current Firm, (d) Highest Educational Level, (e) Type of Firm, (f) Size of Firm, (g) Firm's Engagement in Global Operations?

The findings revealed that the sets of bases on which the participants based their perception of the impact of training on their firms' competitiveness are independent of their demographic characteristics. However, the findings revealed an association between a unique set (Group 1 = *training evaluation* and *observation*; Group 2 = *executive report*, *communication with colleagues and management team*, and *others*) of bases of the impact of training on the firm's competitiveness and the types of firms. In this particular set, Group 1 consists of both formal (training evaluation) and informal (observation) evaluations, and Group 2 contains both formal (executive report) and

informal (communication with colleagues and management team and others) evaluations. This implies that a combination of formal and informal evaluations of the impact of training on the firm's competitiveness is dependent on the types of firms. These findings add new and useful information to an understanding of the relationship between the bases on which training professionals base their perception of the impact of training on measures of their firms' competitiveness and their firms' types.

Research Question 6: Is There a Relationship between Training Professionals' Perceived Involvement in the Integration of Training in Their Firms' Business Strategies and Their Perceived Impact of Training on Their Firm's Competitiveness?

A statistically significant positive relationship was found between the participants' perceived involvement in the integration of training in each of their firms' business strategies and their perceived impact of training on each measure of their firms' competitiveness. This means that the higher the participants perceive their involvement in the integration of training in each of their firms' business strategies, the higher they perceived the impact of training on each measure of their firm's competitiveness.

The findings uniquely contribute to a greater understanding of the relationship between the integration of training [through participants' perceived involvement in the integration of training in each of their firms' business strategies] in the firm's business strategies and the firm's competitiveness [through the participants' perceived impact of training on each measure of their firms' competitiveness] because such relationships have not been reported or documented by any research studies in the literature.

Research Findings Lend Support to the Resource-Based View of the Firm (RBV)

Based on participants' reported awareness of and involvement in the integration of training in their firm's business strategies and perceptual judgment of the impact of training on measures of their firm's competitiveness, it is conclusive that training professionals and their tasks are integrated in their firm's business strategies and contribute to securing a sustained competitive advantage for their firms. This conclusion supports the RBV because the fundamental premise of the RBV in the context of the firm's competitiveness argues that firms are able to obtain sustained competitive advantage through the utilization of resources and capabilities that are valuable, rare, imperfectly imitable, and not substitutable to create value (Barney, 1986, 1991, 1995). In addition, training professionals are people, and the RBV posits that people (human resources), the only repository of knowledge and skills, can be leveraged to create value in a way that is difficult for competitors to imitate (Barney, 1991).

Recommendations for Practice and Future Research

Recommendations for Practice

The following recommendations for practice are based on the findings and conclusions of this study:

1. Training professionals need to improve their awareness of and involvement in the integration of training in various business strategies if they want to increase their strategic visibility, importance, and credibility in their firms.
2. Top management and executives need to genuinely realize the strategic importance of the training function and training professionals as a value-added

source for sustained competitive advantage by increasing the level of training professionals' involvement in the business strategies and having a structure that clearly aligns training activities with corporate objectives and goals.

3. Training professionals need to focus and rely on more objective and scientific evaluations in assessing the impact of training on their firms' competitiveness and business bottom lines if they want to stay relevant strategically and emphasize their strategic role and credibility in their firms.
4. Executives and top management teams need to integrate training and involve training professionals in every business strategy.

Recommendations for Future Research

The following recommendations for future practice are based on the findings and conclusions of this study:

1. This study can be replicated using a sample drawn from a different population. For example, a sample of CEOs can be drawn to study their perception of the impact of training and its integration in the firm's business strategies on the firm's competitiveness.
2. Another direction for future research is to examine the moderating and/or mediating effects of the integration of training in the firm's business strategies on the measures of the firm's competitiveness using quantitative data and more advanced statistical procedures. For instance, an ordinary least squares (OLS) regression with interaction terms can be included to analyze quantitative data to determine if any moderating and/or mediating effects exist between variables –

training, integration of training in the firm's business strategies, and impact of training on the firm's competitiveness.

3. A study can be designed to compare financial measures of the firm's performance in respect to the level of integration of training in the firm's business strategies. For example, a sample of firms with low, moderate, and high integration of training in their business strategies can be identified, and the current and previous financial statements of respective firms can be obtained to compare their financial positions and performance.
4. Finally, it may be interesting to compare the perceived impact of training and its integration of the firm's business strategies on the firm's competitiveness among publicly traded and private firms. For example, it is feasible to survey training professionals or managers employed in publicly traded and private firms regarding their perceptions of the impact of training and its integration of their firms' business strategies on various measures of the competitiveness of their firms.

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APPENDICES

APPENDIX A: Welcome e-Letter

Southern Illinois University Carbondale

Department of Workforce Education and Development

BEGIN THE SURVEY

WELCOME LETTER

Dear Sir/Madam:

My name is Vichet Sum, a Ph.D. candidate in the Department of Workforce Education and Development (WED), Southern Illinois University Carbondale (SIUC). I am writing to invite your participation in a study designed to determine training professionals' perception of their awareness of and involvement in the integration of training in the firm's business strategies and the impact of training on the firm's competitiveness. Training professionals are those whose jobs are related to training and training administration and management including trainers, training specialists, training managers, training administrators, training supervisors, training directors, and training consultants.

Your participation is critical in obtaining valid and reliable data for this study. Your participation is completely voluntary and all responses will be kept anonymous and confidential. The survey takes approximately 10 to 15 minutes to complete and there is no risk to you or your organization for participating in this survey.

If you have any questions about this survey, please contact me or Dr. Marcia Anderson, a Professor Emerita and WED Graduate Coordinator, SIUC. Dr. Anderson's mailing address is Pulliam Hall Room 219c, SIUC, Carbondale, IL 62901 and phone number is 618-453-1968. My mailing address is 716, S. University Apt 02, Carbondale, IL 62901 and phone number is 618-319-4651. If you would like a copy of the results of this study, please send an e-mail with your request to: vsum@siu.edu.

Please click on the "**BEGIN THE SURVEY**" menu on the left to start the survey.

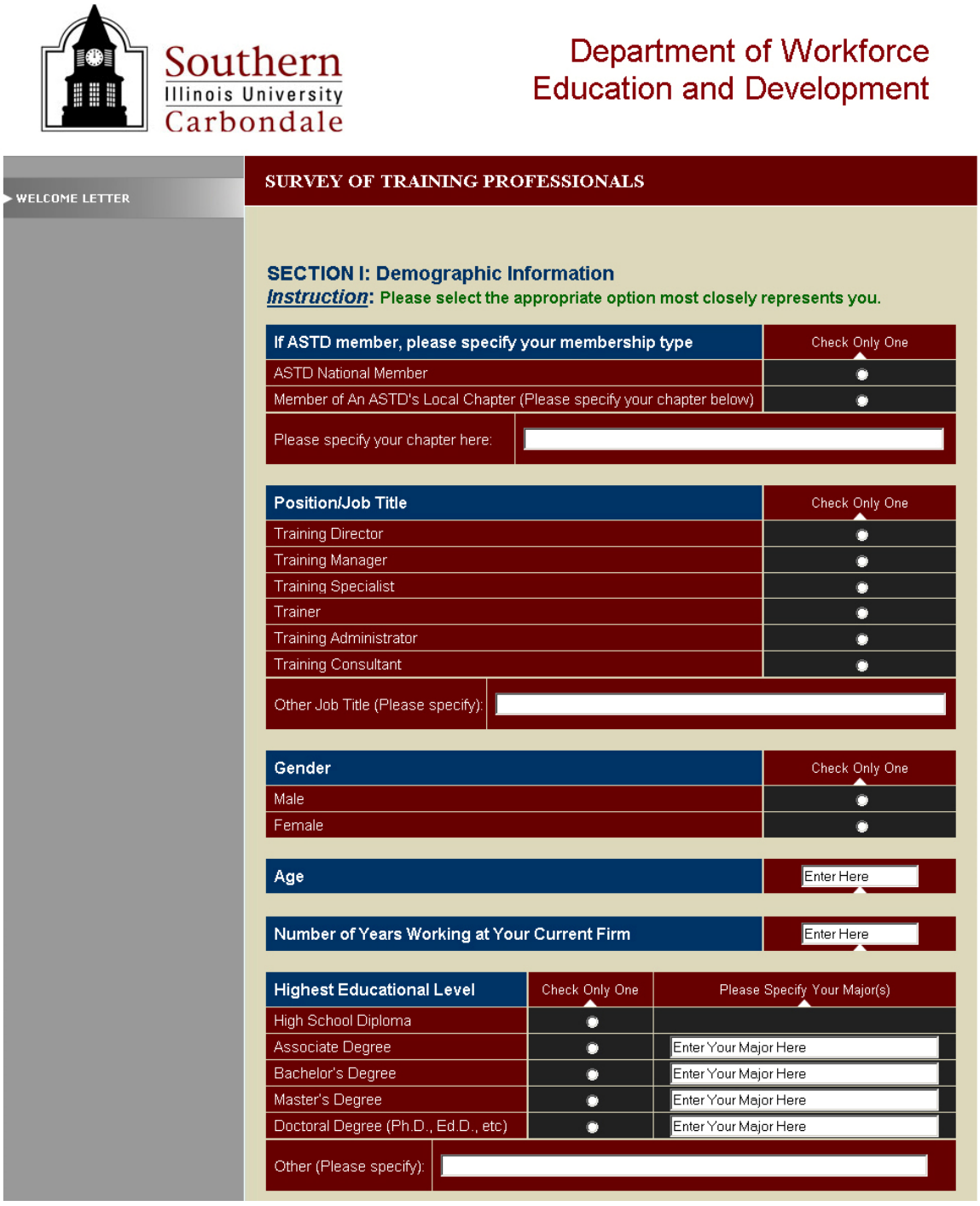
Sincerely yours,

Vichet Sum

Vichet Sum, Ph.D. Candidate
Department of Workforce Education and Development
Southern Illinois University Carbondale

This project has been reviewed and approved by the SIUC Human Subjects Committee. Questions concerning your rights as a participant in this research may be addressed to the Committee Chairperson, Office of Research Development and Administration, Southern Illinois University, Carbondale, IL 62901-4709. E-mail: siuhsc@siu.edu.

APPENDIX B: Online Survey Instrument



Southern Illinois University Carbondale

Department of Workforce Education and Development

WELCOME LETTER

SURVEY OF TRAINING PROFESSIONALS

SECTION I: Demographic Information

***Instruction*: Please select the appropriate option most closely represents you.**

If ASTD member, please specify your membership type	Check Only One
ASTD National Member	○
Member of An ASTD's Local Chapter (Please specify your chapter below)	○
Please specify your chapter here:	

Position/Job Title	Check Only One
Training Director	○
Training Manager	○
Training Specialist	○
Trainer	○
Training Administrator	○
Training Consultant	○
Other Job Title (Please specify):	

Gender	Check Only One
Male	○
Female	○

Age	Enter Here

Number of Years Working at Your Current Firm	Enter Here

Highest Educational Level	Check Only One	Please Specify Your Major(s)
High School Diploma	○	
Associate Degree	○	Enter Your Major Here
Bachelor's Degree	○	Enter Your Major Here
Master's Degree	○	Enter Your Major Here
Doctoral Degree (Ph.D., Ed.D., etc)	○	Enter Your Major Here
Other (Please specify):		

SECTION II: Types of Training

Instruction: **Please select all the types of training offered in your firm.**

Types of Training Offered in Your Firm	Check All that Apply
Profession/Industry-Specific Training	○
Mandatory/Compliance Training	○
Sales Training	○
Management/Supervisory Training	○
Interpersonal/Soft Skills Training	○
IT/Systems Training	○
Customer Service Training	○
Executive Development Training	○
Desktop Application Training	○
Others (Please specify):	

SECTION III: Training Delivery Formats

Instruction: **Please select all the training delivery formats adopted in your firm.**

Training Delivery Formats	Check All that Apply
Virtual Classroom	○
Instructor-Led Classroom	○
Online Self-Study	○
Others (Please specify):	

SECTION IV: Information about Your Firm

Instruction: **Please select the appropriate option most closely represents your firm.**

Information About Your Firm	Selection
Type of business operations	Please Choose One
Number of employees	Please Choose One
Engaged in global operations	Please Choose One

SECTION V: Awareness of and Involvement in the Integration of Training in the Firm's Business Strategies

Instruction: Please answer each question by choosing "YES" or "NO". If you answer "NO", please go to the next question.

Note: Click on the "?" to view detailed explanation of a specific strategy.

What is the level of your awareness of the integration of training in your firm's differentiation strategy?

- ○ YES, I understand the integration of training in the differentiation strategy in depth.
- ○ YES, I have some understanding of the integration of training in the differentiation strategy.
- ○ YES, I am aware but do not know the details.
- ○ NO, I am not aware. (If you answer "NO", please go to the next question)

If YES, Please rate your involvement in the integration of training in your firm's differentiation strategy.	Very High	High	Moderate	Low	Very Low
	○	○	○	○	○

What is the level of your awareness of the integration of training in your firm's cost leadership strategy?

- ○ YES, I understand the integration of training in the cost leadership strategy in depth.
- ○ YES, I have some understanding of the integration of training in the cost leadership strategy.
- ○ YES, I am aware but do not know the details.
- ○ NO, I am not aware. (If you answer "NO", please go to the next question)

If YES, Please rate your involvement in the integration of training in your firm's cost leadership strategy.	Very High	High	Moderate	Low	Very Low
	○	○	○	○	○

What is the level of your awareness of the integration of training in your firm's focus strategy?

- ○ YES, I understand the integration of training in the focus strategy in depth.
- ○ YES, I have some understanding of the integration of in the focus strategy.
- ○ YES, I am aware but do not know the details.
- ○ NO, I am not aware. (If you answer "NO", please go to the next question)

If YES, Please rate your involvement in the integration of training in your firm's focus strategy.	Very High	High	Moderate	Low	Very Low
	○	○	○	○	○

What is the level of your awareness of the integration of training in your firm's market penetration strategy?

- YES, I understand the integration of training in the market penetration strategy in depth.
- YES, I have some understanding of the integration of training in the market penetration strategy.
- YES, I am aware but do not know the details.
- NO, I am not aware. (If you answer "NO", please go to the next question)

If YES, Please rate your involvement in the integration of training in your firm's market penetration strategy.	Very High	High	Moderate	Low	Very Low
	○	○	○	○	○

What is the level of your awareness of the integration of training in your firm's product/service development strategy?

- YES, I understand the integration of training in the product development strategy in depth.
- YES, I have some understanding of the integration of training in the product development strategy.
- YES, I am aware but do not know the details.
- NO, I am not aware. (If you answer "NO", please go to the next question)

If YES, Please rate your involvement in the integration of training in your firm's product/service development strategy.	Very High	High	Moderate	Low	Very Low
	○	○	○	○	○

What is the level of your awareness of the integration of training in your firm's market development strategy?

- YES, I understand the integration of training in the market development strategy in depth.
- YES, I have some understanding of the integration of training in the market development strategy.
- YES, I am aware but do not know the details.
- NO, I am not aware. (If you answer "NO", please go to the next question)

If YES, Please rate your involvement in the integration of training in your firm's market development strategy.	Very High	High	Moderate	Low	Very Low
	○	○	○	○	○

What is the level of your awareness of the integration of training in your firm's diversification strategy?

- YES, I understand the integration of training in the diversification strategy in depth.
- YES, I have some understanding of the integration of training in the diversification strategy.
- YES, I am aware but do not know the details.
- NO, I am not aware. (If you answer "NO", please go to the next question)

If YES, Please rate your involvement in the integration of training in your firm's diversification strategy.	Very High	High	Moderate	Low	Very Low
	○	○	○	○	○

SECTION VI: Perception of Training Impact on the Firm's Competitiveness

Instruction: Please rate your level of agreement to each of the following statements and answer each of the questions corresponding to teach statement. If you answer "N/A", please go to the next statement.

	Very High	High	Moderate	Low	Very Low	N/A
Training contributes to the improvement of your firm's readiness for current and future business opportunities and threats.	○	○	○	○	○	○

On what basis do you rate the extent to which training contributes to the improvement of your firm's readiness for current and future business opportunities and threats?

Select All that Apply:

- ○ Training Evaluation
- ○ Executive Report
- ○ Communication with Colleagues and Management Team
- ○ Observation
- ○ Meeting

Other: _____

	Very High	High	Moderate	Low	Very Low	N/A
Training contributes to your firm's productivity.	○	○	○	○	○	○

On what basis do you rate the extent to which training contributes to your firm's productivity?

Select All that Apply:

- ○ Training Evaluation
- ○ Executive Report
- ○ Communication with Colleagues and Management Team
- ○ Observation
- ○ Meeting

Other: _____

	Very High	High	Moderate	Low	Very Low	N/A
Training contributes to your firm's efficiency.	○	○	○	○	○	○

On what basis do you rate the extent to which training contributes to your firm's efficiency?

Select All that Apply:

- ○ Training Evaluation
- ○ Executive Report
- ○ Communication with Colleagues and Management Team
- ○ Observation
- ○ Meeting

Other: _____

Training contributes to your firm's differentiation in the marketplace.	Very High	High	Moderate	Low	Very Low	N/A
	○	○	○	○	○	○

On what basis do you rate the extent to which training contributes to your firm's differentiation in the marketplace?

Select All that Apply:

- ○ Training Evaluation
- ○ Executive Report
- ○ Communication with Colleagues and Management Team
- ○ Observation
- ○ Meeting

Other: _____

Training contributes to the improvement of the design and development of your firm's new products/services.	Very High	High	Moderate	Low	Very Low	N/A
	○	○	○	○	○	○

On what basis do you rate the extent to which training contributes to the improvement of the design and development of your firm's new products/services?

Select All that Apply:

- ○ Training Evaluation
- ○ Executive Report
- ○ Communication with Colleagues and Management Team
- ○ Observation
- ○ Meeting

Other: _____

Training contributes to the effective introduction of your firm's new products/services to the market.	Very High	High	Moderate	Low	Very Low	N/A
	○	○	○	○	○	○

On what basis do you rate the extent to which training contributes to the effective introduction of your firm's new products/services to the market?

Select All that Apply:

- ○ Training Evaluation
- ○ Executive Report
- ○ Communication with Colleagues and Management Team
- ○ Observation
- ○ Meeting

Other: _____

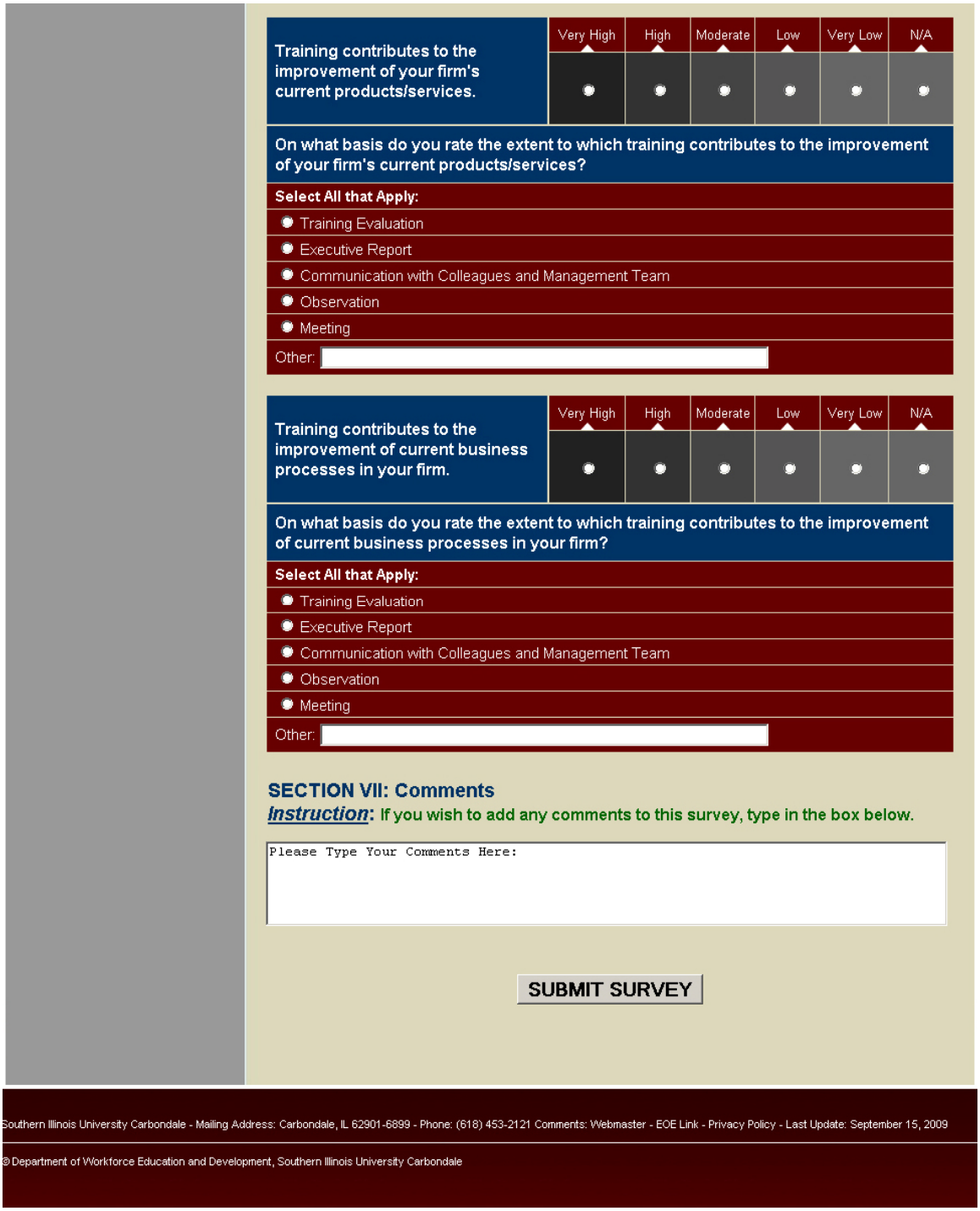
Training contributes to the effective introduction of new business processes in your firm.	Very High	High	Moderate	Low	Very Low	N/A
	○	○	○	○	○	○

On what basis do you rate the extent to which training contributes to the effective introduction of new business processes in your firm?

Select All that Apply:

- ○ Training Evaluation
- ○ Executive Report
- ○ Communication with Colleagues and Management Team
- ○ Observation
- ○ Meeting

Other: _____



Training contributes to the improvement of your firm's current products/services.	Very High	High	Moderate	Low	Very Low	N/A
	○	○	○	○	○	○

On what basis do you rate the extent to which training contributes to the improvement of your firm's current products/services?

Select All that Apply:

- ☐ Training Evaluation
- ☐ Executive Report
- ☐ Communication with Colleagues and Management Team
- ☐ Observation
- ☐ Meeting

Other: ____

Training contributes to the improvement of current business processes in your firm.	Very High	High	Moderate	Low	Very Low	N/A
	○	○	○	○	○	○

On what basis do you rate the extent to which training contributes to the improvement of current business processes in your firm?

Select All that Apply:

- ☐ Training Evaluation
- ☐ Executive Report
- ☐ Communication with Colleagues and Management Team
- ☐ Observation
- ☐ Meeting

Other: ____

SECTION VII: Comments

Instruction: If you wish to add any comments to this survey, type in the box below.

Please Type Your Comments Here:

SUBMIT SURVEY

APPPENDIX C: Human Subjects Committee Approval Letter

Southern
Illinois University
Carbondale

Research Development and Administration
Human Subjects Committee
www.siu.edu/orda/human
www.siuc.edu

To: Vichet Sum

From: Anthony J. Cuvo, Ph.D.
Chair, Human Subjects Committee

Date: September 3, 2009

Subject: *The Impact of Training and Its Integration in the Firm's Business Strategies on the Firm's Competitiveness*

The referenced study has been reviewed and approved by the SIUC Human Subjects Committee.

This approval expires on 9/1/2010, one (1) year from the review date. Regulations make no provision for any grace period extending beyond the above expiration date. Investigators must plan ahead if they anticipate the need to continue their research past this period. The application should be submitted 30 days prior to expiration with sufficient protocol summary and status report details, including number of accrued subjects and whether any withdrew due to complaint or injury. If you should continue your research without an approved extension, you would be in non-compliance of federal regulations. You would risk having your research halted and the loss of any data collected while HSC approval has lapsed. Extensions will not be required to continue work on an approved project when all the data has been collected, there will be no more interaction or intervention with human subjects and **subject identifiers have been removed** (e.g. during the data analysis or report writing stages).

Also note that any future modifications to your protocol must be submitted to the Committee for review and approval prior to their implementation.

Your Form A approval is enclosed. Best wishes for a successful study.

This institution has an Assurance on file with the USDHHS Office of Human Research Protection. The Assurance number is 00005334.

AJC:kr

Cc: Marcia Anderson

VITA

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Essay winning award on global leadership, University of Arizona.

Dissertation Title:

THE IMPACT OF TRAINING AND ITS INTEGRATION IN THE FIRM'S BUSINESS STRATEGIES ON THE FIRM'S COMPETITIVENESS

Major Professors: Dr. MARCIA ANDERSON and Dr. JENNIFER CALVIN

Publications:

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