EDUCATION, EMPLOYABILITY, AND THE AMERICAN WORKFORCE: MANUFACTURING PERCEPTIONS OF CREDENTIALS, MOTIVATIONS FOR SUPPORTING DEGREE COMPLETION AND BARRIERS TO ADULT ENROLLMENT

By

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ABSTRACT

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This study examines manufacturing employer perceptions of postsecondary credentials, the ways in which they find them valuable, and explores the barriers employers identify which prevent employees from enrolling in employer sponsored continuing education programs. In total, 14 staff members were interviewed representing five manufacturing employers and one manufacturing association in Michigan. The results of this study yield seven themes related to the questions under study: (1) Credentials are valuable for advanced technical and professional positions, (2) Postsecondary degrees are often required for leadership and supervisory positions, (3) Postsecondary credentials are not essential for the majority of entry and mid-level manufacturing positions now or in the near future, (4) Most employers are willing to support employee training if is directly related to work, (5) The majority of manufacturing employers do offer some form of tuition reimbursement, (6) The lack of employee participation in tuition reimbursement programs is multi-faceted, and (7) Education is not a priority among adults without a postsecondary degree. Associated implications related to Lumina Foundation's Goal 2025 and the completion agenda are discussed along with potential opportunities to improve experienced adult postsecondary credential attainment.

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INTRODUCTION

The completion of a postsecondary education has never been more important because having a higher education credential significantly influences individual employability and has a number of other benefits including building character, cultivating a sense of civic responsibility, and honing intellectual skills. Colleges and universities serve multiple purposes and while the goals of higher education continue to be a hotly debated topic, the production of credentials is paramount and vital to the economic, social, and personal prosperity of the United States workforce. The national need to increase postsecondary degree completion is illustrated by declarations from former President of the United States, Barack Obama, who in the midst of the 2009 recession, set a national goal for educational attainment: by 2020, the U.S. will lead the world in the share of its population with a college degree (Cynamon, Fazzari, & Setterfield, 2013; Nodine & Johnstone, 2015). Meanwhile, the traditional model of higher education is being challenged by demands for greater accountability among students, parents, policymakers, government, funding sources, and businesses to enroll more students and produce successful graduates with employable skills. This dissertation will address the credential completion challenge by focusing on adult completion for those currently employed through the lens of employers. Specifically, this study seeks to investigate three primary research questions – (1) what do employers view as the broader purpose of credentials, (2) how do employers support employee reeducation up to and including degree completion, and (3) what are employer perceptions of employee barriers to taking advantage of employer supported continuing education opportunities?

Work by the Lumina Foundation emphasizes "Goal 2025" and calls for 60 percent of Americans to hold a postsecondary degree (bachelor's, associate's, or certificate) by 2025 (Merisotis, 2016). This goal originally and exclusively advocated for completion in terms of bachelor's and associate's degrees. Only recently has Goal 2025 expanded its definition of postsecondary credentials to include certificates. This is a signal that traditional (i.e. only viewing "credentials" as post-secondary degrees such as a bachelor's or associates degree) conceptualizations of credentials are changing. For this reason, it is important to understand not only why employers support credential completion, but also what employers view as the broader purpose of credentials. In recent reports, the Lumina Foundation has articulated that employer-supported education could be instrumental in helping American adults obtain postsecondary credentials (Lumina Foundation, 2016). This introduction will cover the current demand for postsecondary credentials in Michigan, explain the impact of the transition to a knowledge-based economy, and discuss the corresponding changes in the credentialing landscape in the United States.

Current Credentialing Trends in the United States

Beginning in 1980, the demand for workers with some form of postsecondary education has grown by 3 percent per year, while the supply of talent has only grown by 1 percent per year (Carnevale & Rose, 2011). In 1980, the United States was a world leader in bachelor's degree attainment and thirty-five years later, it is 19th of 23 countries in the proportion of entering university students who complete a degree (Organisation for Economic Co-operations and Development, 2017). Over the past 37 years, the United States lost its stranglehold on leading the world in educational attainment, a lead they have had since the nineteenth century (Goldin & Katz, 2009). In order to become a world

leader once again, the various stakeholders within the postsecondary community must work together to improve degree completion. This is especially important as both employers and employees are interested in transparent credentialing systems that allow for each to better understand what competencies are needed, how such skills are assessed, and what career paths are available to those with certain credentials (Gallagher, 2016).

The Credentialing Situation in Michigan

The credential shortage is especially evident in the State of Michigan which will be the focus of the present study. In 2018, 60 percent of Michigan positions require some form of postsecondary credential and currently, only 35 percent of the workforce holds an associate's degree or higher well below the national average of 40 percent (Austin, 2015). A potential funding source for supporting degree completion is employers themselves, which is why they are a topic of investigation in this dissertation. The role of employers has already been identified by the Lumina Foundation (2016) and their recent study is the only one to date which has provided some empirical evidence of their importance and role in supporting adult degree completion. Michigan has over 221,000 adults ages 25-44 who lack a high school diploma or GED, yet less than 7 percent have enrolled in adult education (any education post high school) since 2004 (Ruark, 2015). Austin (2015) suggests that any strategy for increasing postsecondary attainment in Michigan must also take into account the changing demographics of Michigan's population. Looking first at age, the fastest growing and largest population in Michigan's workforce is senior and older workers ages 65 and older (Austin, 2015). According to the National Center for Education Statistics, the number of Michigan high school graduates has already "peaked" and Michigan is one of six states to see a reduction in high school graduates by 15

percent or more (Prescott & Bransberger, 2012). The labor force in Michigan aging and not enough younger workers are coming to Michigan to work. These factors contribute to the critical need for more adults to enroll in higher education programs and complete a postsecondary credential to meet the needs of the local economy and achieve individual economic prosperity and stability. Thus, to fill this attainment gap more of the adult workforce needs to obtain a postsecondary credential to meet the increasing demand for advanced skills and training. One potentially viable avenue is employers themselves and it is vital to understand why employers are motivated (or not) to support employee credentialing. Examining this question is the premise of this research.

Problem Statement

Over the past several decades, the demands of the workplace have changed from having an industrial emphasis on physical inputs and natural resources, to building a knowledge-based economy with a reliance on intellectual capabilities (Bell, 1973; Block, 1990; Ronchi, 1985; Sum & Jessop, 2013). The knowledge economy is defined as "production and service based on knowledge-intensive activities that contribute to an accelerated pace of technological and science advance, as well as equally rapid obsolescence" (Powell & Snellman, 2004, pg. 201). This definition highlights an important distinction because going forward, employers and the economy at large will rely on higher-level skills possessed by those with advanced training and certifications. Examining employer motivations for supporting degree completion, and better understanding of what employers view as the broader purpose of credentials is the goal of the present research.

The trend towards a knowledge-based economy is not a recent phenomenon in the United States as policy makers, political leaders, and others have increasingly focused on raising higher education attainment rates. While it is important for "traditional age" students to enroll in some form of postsecondary education, this alone will not be enough to meet Lumina's 2025 goal, as more adult students need to pursue or complete a degree to meet this attainment goal (Carnevale & Rose, 2011; Carnevale, Smith, & Strohl 2013; Merisotis, 2016). The Adult Completion Network is another group which identifies a number of states with initiatives to address the needs and aspirations of citizens (particularly adults) who have taken some college courses or have a need or desire to complete a degree and have never attended a postsecondary institution. As the Adult Completion Network shows, states with initiatives addressing the needs and aspirations of citizens with "some college" have the benefit of postsecondary coordinating agencies to aggregate information and advice about degree completion via online programs. Unfortunately, Michigan is one of a handful of states without such an organization and thus there is no obvious provider of such a resource or coordinating body to address the adult completion challenge.

Improving postsecondary completion (i.e., degrees and certificates) among adults is a problem that continues to attract national, regional, and local interest. These initiatives have begun to consider the ways in which employers may be interested in supporting degree completion. This is the central tension that this study seeks to explore – what are the conditions under which employers are interested in supporting employee reeducation and degree completion. Answers to these questions will also yield valuable information regarding what employers think about credentials more broadly. Based on

the need to improve adult postsecondary credential completion and understand employer views of credentialing, the current study utilizes the following research questions:

- **RQ1:** What do employers think about postsecondary credentials (e.g., their purpose, value, etc.)?
- **RQ2:** How do employers support employee continuing education and degree completion?
- **RQ3:** What are employer perceptions of employee barriers to taking advantage of employer supported continuing education opportunities?

Purpose of the Study

Previous research suggests employers are cautious and hesitant to invest in adult employee education because of concerns over the cost, return on investment, and whether or not the employee will become more marketable as a result and ultimately leave (Cappelli, 2012; 2015). In addition, employers tend to only emphasize continuing education when there is an immediate business need and the knowledge, skills, or abilities are actually required to be successful in a given role (Liker & Hoseus, 2009). Interest in adult credential completion has never been more important and interest in the success of adults who currently do not hold a postsecondary credential is evident across the higher education, economic, and political landscapes (Carnevale, Smith, & Strohl 2013; Erisman & Steele, 2015; Merisotis, 2016).

This study probes a timely question as there has been increasing interest in higher education to demonstrate the connection between higher education, regional economic development, workplace success, and community engagement (Austin, 2015). Based on demands from employers, the need for increasing credential attainment among adults,

and the current state of credentialing at postsecondary institutions, there is an opportunity for a multidimensional original research project. This research seeks to investigate employer motivations for supporting degree completion, employer perceptions of the current state of credentialing, and what employers see as the barriers to employer supported adult degree completion. While employer support can come in a number of forms (i.e., offering flexible work schedules, tuition reimbursement, career progression, etc.) understanding current employer perceptions of credentials is increasingly valuable at a time where adult degree completion has become imperative for a multitude of stakeholders and communities.

Other Influential Considerations – The State of the Labor Market

Before delving into this research, it is of the utmost important to recognize that this study was conducted at a snapshot in time and reflects the current state of manufacturing employer perceptions as it pertains to postsecondary education and employer supported education. One important indicator to consider is the state of unemployment in Michigan. At the time of this writing, the most recent data available is for September of 2018 and at this time, unemployment in the United States is 3.7 percent and unemployment in the state of Michigan is 4.5 percent (Bureau of Labor Statistics, 2018). Based on conventional human resources knowledge, when unemployment reaches the threshold of 4 percent just about everyone who is able and interested in working, is working. In July of 2018, Michigan's unemployment rate dropped to 3.9 percent, the lowest since June of 2000 (Bureau of Labor Statistics, 2018). Research on economic trends and higher education enrollment also support this notion because a relationship has been verified suggesting as unemployment increases so does enrollment in higher

education programs (Alessandrini, Kosempel, & Stengos, 2015; Fain, 2014; Kimmel, Gaylor, Grubbs, & Hayes, 2012; Smith, 2018). While the present study is not examining whether or not or even why employees enroll in higher education, it may influence the perceptions and actions of employers which is why it is mentioned here.

Study Significance

While higher education serves a number of purposes today, one of the primary roles of higher education is to prepare students for occupations in service of the student, the community, and the economy at large. Over the past several decades, college leaders and policy makers have touted the individual benefits of a college degree such as the financial payoff in order to justify rising college costs (Carnevale, Rose, & Cheah, 2011). The emphasis on individual benefits may be one reason why employers may be reluctant to support traditional adult employee education in the form of postsecondary completion. Despite the importance of career development and credentials, there are growing concerns among scholars and practitioners that such an emphasis detracts from the overall purpose and mission of higher education – to create well-rounded and prepared minds that benefit society (Blumenstyk, 2014; Fortino, 2014).

This work seeks to understand adult completion problem in Michigan by focusing on employers themselves. A study of this nature is critical as the views and perceptions of employers are often assumed as research often speaks to employers while little investigation has sought to gather data from the employers themselves on this important area of inquiry. Previous work in Michigan has considered these issues from a federal or state policy perspective focusing exclusively on degree completion, but has not included input directly from employers (Austin, 2015; Center for Michigan, 2015). This project

takes a complementary approach and focuses on finding ways to better understand employer motivations for supporting credentialing (or not) and what employers view as the broader purpose of credentials. Furthermore, understanding to what extent employers believe it is their responsibility to provide relevant training employees would be revealing. Identifying specific reasons why employers do and do not support the credentialing of employees and to what extent they feel responsible for this problem has meaningful repercussions for regional and national completion agendas and the credentialing landscape itself. This study seeks to investigate the roles, actions, and perceptions of employers regarding the current and future state of educational credentials and employer sponsored degree completion. Although employers are the focus of this study, in the final chapter, the perspective of working class employees themselves are considered in light of the findings. Ultimately, this research seeks to achieve greater clarity around the current and future needs of businesses regarding training, retraining, employer sponsored degree completion for adults, and the current and future role credentials in an increasingly globally competitive marketplace.

LITERATURE REVIEW

University credentials hold strong and unique power in what they communicate about the holder of the credential, their capabilities, and their employability in the external labor market. In current times, a distinctive feature about the postindustrial society is the role of formal education and training in permitting entrance to specific occupations (Baker, 2011). In his book, *The Future of University Credentials*, Sean Gallagher (2016) notes that college and university degrees have long been the gold standard in credentialing and serve as the best path to stable jobs and growing wages. However, Gallagher (2016) aptly suggests new credentialing models and options are emerging. As society has pivoted away from the Industrial Age and stepped into the Digital Age, new challenges have arisen such as training and recruiting knowledge workers, and bridging cultural and economic divides which have meaningful implications for both employers and credentialing institutions (Bennett & Bell, 2010). This literature review frames the problem of adult degree completion by focusing on three distinct areas – (1) the current state of credentialing in the United States, (2) current theories associated with credentialing, and (3) what is known about employer perceptions regarding credentialing and employee retraining.

We are now entering a time where some of the most routine jobs are automated and even some highly skilled jobs may face displacement as a result of automation in the coming years. However, the growth of "hybrid jobs" which combine and blend two or more skills such as (marketing and analytics), are absolutely exploding (Gallagher, 2016). As technology becomes more intertwined in the workplace, monotonous and procedural tasks are now being automated and a recent report estimates that 47 percent of all

employment in the United States is susceptible to automation in the next ten years (Frey & Osborne, 2013). Additional research has investigated the capabilities of technology to replicate human talents and found that while some tasks can be replicated, perception, creative reasoning, social intelligence, and the application of conceptual knowledge cannot easily be copied (Frey & Osborne, 2013; Levy & Murnane, 2012). This suggests education, adult training, and credential completion will become even more important in the future in order to keep pace with advancements in occupational skill demands.

This literature review argues while the world at work is changing and new models of credentialing are emerging, we know little about employer perceptions of credentialing nor what is needed for the future. This literature review relies on evidence from the fields of higher education, business, human resources, management, and workforce development to discuss current knowledge of employer supported adult degree completion. The literature review that follows is divided into three sections – the first section reviews the current state of credentialing, the second section identifies six theories that relate to credentialing which ultimately serve as the foundation for the theoretical framework for this research, and the final section examines what we know about employers and credentialing.

The Current State of Credentialing and Credentials

Workforce readiness and education policy are important areas of study now, and will continue to be as this scholarship influences policymakers at the local, state, and national levels to ensure educational programs are aligned with workforce needs and are accessible to traditional age and adult students. Better understanding the ways in which higher education credential production intersects with employment has a real and

meaningful impact on the time, effort, and lives of a large portion of citizens and employers. While it is critical to understand what employers' value about credentials and under what conditions they are willing to support degree completion, it is equally important to examine the current system of credentialing. The question of what a credential means and signifies to employers is especially valuable as new forms of credentials are emerging. This section will cover a brief history of the United States system of higher education, define what "credential" means, review the current credentials offered in the United States, and identify some of the new forms of postsecondary credentials.

History of Credentialing – Curriculum

Higher education curriculum in the United States has undergone significant changes since the initial emphasis on piety and social stability (Thelin, 2011). American colleges were initially established by religious groups to foster faith, educate ministers, and develop the colonial elite (Thelin, 2011). Coursework primarily focused on content in the areas of Greek, Hebrew, and Latin with a focus on making students "good men" through sound character development (Crews, 2015; Geiger, 2005). This approach to curriculum was typical until the American Enlightenment. During this period, perceptions changed regarding what constituted the ideal collegiate education as a newfound priority was placed on reason, observation, and testing of ideas and assumptions (Thelin, 2011). Benjamin Franklin was a champion of the Enlightenment and advocated for expanded higher education opportunities to train government and business leaders (Crews, 2015). His interest in exploring these concepts led to the establishment of "new model" colleges where an innovative emphasis was placed on subjects such as the arts, literature, ethics,

music, natural history, geology, geography, and modern languages. Thomas Jefferson established the University of Virginia in 1818 and advocated for a skilled workforce where students would study coursework in ancient and modern languages, math, natural philosophy, anatomy, medicine, and law (Crews, 2015; Thelin, 2011). This was the first "true" university and was seen as such a radical undertaking, no other institution used this model until after the Civil War (Crews, 2015).

As the economy and demographics of the United States changed during this time, postsecondary institutions began to shift their emphasis towards an education that prepared graduates for more highly skilled urban professions (Burke, 1982). Shortly after the industrial revolution, Abraham Lincoln signed the Morrill Land-Grant Act in 1862, which pledged to donate land for agriculture and mechanic arts colleges in each state (Bok, 2015). This Act led to the growth of higher education institutions where they promoted curriculum in medicine, law, engineering, military science, commerce, teacher education, agriculture, and technology, which reflected a growing need for knowledge in these areas (Geiger, 2005; Thelin, 2011). There was also an emergence of advanced degree programs based on the German ideal of advanced scholarship as higher education institutions transformed from "colleges" to "universities" (Bok, 2015). Arguably, the last major external influences on curriculum were the increase in enrollment in the early 20th century and the introduction of the GI Bill in 1944, which introduced the philosophy that higher education was necessary for the masses (Bok, 2015; Thelin, 2011). From the 1970s to present day, enrollment has grown substantially while the demand for curriculum relevance dominated the higher education landscape where students were

turning away from the arts and science toward more vocation and professional majors (Geiger, 2005).

The emphasis is even more pronounced today as economic, political, social, and technological factors have created new needs for knowledge, and while higher education institutions have adapted and unique institutions have emerged to meet these demands, additional changes may be on the horizon (Hora, 2016). Some even suggest that it is the emphasis on the private benefits of higher education that has resulted in students paying more for a postsecondary education while receiving less in return (Newfield, 2016). America is now in the midst of an information economy, which requires the most educated population in history. While curriculum has become more vocational in nature over time, there is a need to better understand employer views on current credentials and what employers view as the benefits and costs associated with employer supported adult postsecondary degree completion.

Defining Credential

The first use of the word "credential" was in 1888 and originates from medieval times where individuals and guilds fought for exclusive rights to practice professions, oversee the conduct of the activity, and to separate the qualified from the unqualified (Benton, 1991). The first use of credence was in 1665 which is defined as "belief as to the truth of something" (Oxford English Dictionary, 2013). The Oxford English Dictionary defines credential as "a qualification, achievement, quality, or aspect of a person's background, especially when used to indicate their suitability for something" (Oxford English Dictionary, 2013, p. 237). The Oxford English Dictionary (2013) goes on to identify an alternative definition of credentials as "a document proving a person's

identity or qualifications" which also has historical roots. The etymology of "credential" traces its development from the Latin word "credent" – which means believing (Oxford English Dictionary, 2013). "Credent" comes from the verb "credere" and was often use as an adjective in the sense of giving credence to or recommending, which was frequently cited in letters or papers (Oxford English Dictionary, 2013).

These definitions are supported by current literature which suggests "credentials signal education and skills" (Gallagher, 2016, p. x). Others suggest those with credentials have undergone "extensive education, training, and indenture, and are able to demonstrate that they have gained sufficient knowledge and practical experience along the way; and that they received adequate supervision" (Susskind & Susskind; 2015 p. 16). The term *credential* will be used typically in reference to degrees, but in the broader context, credential often refers to other categories of postsecondary awards such as certificates and badges that go beyond the traditional conceptualization of a degree.

Another important assumption is that the use of the term *credential* in this paper limits our discussion to programs offered by or in affiliation with accredited colleges and universities. This distinction is important because of the fragmented environment of professional certification credentials and licenses awarded by companies, industry organizations associations, and governmental bodies. The term *credential* also has employability undertones which typically imply that an individual has completed a course of study and the credential itself is a portable form of currency which has value in the external labor market. As the use and assumptions embedded in the word credentials have changed over time, this study comes at a critical juncture when the ways in which employable skills are becoming credentialed are changing, better understanding the

current and future expectations of credentials is imperative. As technology advances, the role of credentials is shifting, but the direction, duration and impact are not entirely observable. However, what is evident is that technology and automation are having a lasting impact on employment and credentialing. Better understanding what this change means to employers and for the current system of postsecondary education is one secondary outcome of the present study.

Current Credentials Offered in the United States

There are essentially four well known credentials offered in the United States – (1) associate, (2) bachelor, (3) master, and (4) doctoral and professional degrees. As mentioned previously, the two-year associate's degree was originally intended to serve as the first two years of general coursework for a bachelor's degree in order to allow universities to focus on upper echelon of coursework (Bok, 2015). In the United States, the bachelor's degree typically requires four years of full-time college work and remains one of the most well-understood postsecondary credentials. Starting in the 1980s and 1990s most master's degrees were awarded in a select number of professional and practically concentrated fields (Glazer, 1986). Between 2000 and 2010 the number of master's degrees awarded increased by 46 percent (Glazer, 1986; National Center for Education Statistics, 2017). Lastly, doctorate and professional degrees are the last type of common credential offered in the United States and are the least common in terms of the percentage of the population that actually has them. Only 7 percent of the adult population holds one (National Center for Education Statistics, 2017). These advanced degrees require significant time beyond an undergraduate degree which can vary from four to eight years for a PhD (Susskind & Susskind, 2015).

The four credentials that have been previously reviewed highlight what is often thought of as the major credentials offered in the United States, but there is a fifth credential that is becoming more widely included in this conversation – the certificate. As mentioned previously, Lumina's 2025 goal originally exclusively advocated for completion in terms of bachelor's and associate's degrees, but recently expanded to include certificates, which further legitimizes the certificate as a credential. The certificate which has recent been recognized in Lumina's completion agenda is often referred to as a "high quality certificate" to distinguish these certificates from other certifications such as the Microsoft Office certification. High quality certificates are similar to degrees, but require fewer courses and less time; usually taking a year or less. Certificates also have an important role to bring more equity in postsecondary education and have typically received greater participation from low income and minority students (Carnevale, Rose, & Hanson, 2012). As demands of employers and the economy shift, education must be accessible and available in forms that allow individuals to obtain skills quickly. Thus, there is a need for higher education systems to endorse language that clearly articulates what has been learned and how that translates to one's capabilities in the workplace. With such a wide array of credentials and emerging options, it is vital to understand what employers view as the broader purpose of credentials and understand their perceptions of current and emerging forms of credentials.

Defining the Professions – A Historical and Contemporary Review

Over the past century, scholars from sociology, economics, history, philosophy, psychology, education, and management (among others) have discussed and debated the nature and definition of professions. With the rise of technology it would appear that the

days of traditional professions may be numbered (Susskind & Susskind, 2015). Given the important role credentials play in professional positions it is important to provide context on how professionals are identified and empowered. Considering the goals of this reearch, it is my belief that the professions are in midst of an important shift and the ways in which credentials are offered and what they signify is at the heart of this impending transition.

Embedded in the knowledge economy is our nation's reliance on professions that affords them considerable status and prestige which are enjoyed by the practitioners. The definition of what constitutes a profession has plagued the field for the past half century and some doubt whether or not a sound definition is even possible, but professions do share a set of similarities (Abbott, 2014; Freidson, 1988). Susskind and Susskind (2015) identify four commonalities of professions: (1) specialist knowledge, (2) admission to professional programs depends on credentials, (3) the activities are regulated, and (4) the job is bounded by a set of values. Being a professional is indicative of having knowledge that lay people do not which is often certified by an accrediting body. As society advances and demands on the job become more complex, workers will need to be professionals of one kind or another in order to be successful in the workplace. While there is little consensuses about the exact point in time professions came in to being, professional occupations are expected to grow significantly as positions and the need for unskilled labor continues to dwindle with technology automating many of the simplest tasks (Carnevale, Smith, & Strohl, 2010; Frey & Osborne, 2013).

For this reason, a predicament has arisen because while the intellectual demands of positions have increased, credentials are still being offered on a seat time and credit

basis. While this has remained stagnant at most traditional postsecondary institutions (as opposed to, for example, a competency-based program like Western Governor's University), new types of credentials such as badges and certificates are emerging. Meanwhile, the external market has been yearning for a new system to adequately prepare people for the current world of work. The current organization of higher education can serve as a gatekeeper for fundamental knowledge, experience, and expertise that is essential to the social and economic well-being of all of us. While some movements have attempted to make knowledge and training accessible to all, these ventures have largely been failures (i.e., Massive Open Online Courses (MOOCs)), but there is growing evidence that change is coming. With a growing emphasis on adult education, skill gaps, professionalization, and finding the "right" skills to be successful in the knowledge economy, there must be a clear understanding between educational institutions and employers on what it actually means to have a credential.

MOOCs – A Failed Experiment?

Massive Open Online Courses (MOOCs) are online learning repositories which use open education resource where learners have access to coursework in areas for free, but the completion of "courses" does not result in a degree or transferrable credits. MOOCs were originally heralded to have solved the problem of rising costs in academia by leveraging Silicon Valley's information technology platforms for the purposes of higher education to deliver more learning for less money (Newfield, 2016). The *New York Times* even proclaimed that 2012 was the "year of the MOOC" (Pappano, 2012). In 2013, twenty-two of the top twenty-five "best" national universities ranked by *US News and World* report offered MOOC classes (Voss, 2013). In his most recent book

Christopher Newfield (2016) shares that the feedback from students about MOOCs is that the courses are too easy, the professors are only available sometimes by email and "it's like a talking textbook with a chatroom" (p. 13). Previous studies on MOOCs reveal that a small percentage (5-12 percent) of students actually completed the MOOC and although some argue MOOCs expand access to higher education, a majority of participants (two-thirds) already hold at least a bachelor's degree (Ho et al., 2014; Perna et al., 2014). Today, only 8 percent of the 2,800 colleges and universities who responded to an annual online education survey reported offering a MOOC (Ho, Blair, Nesterko, Seaton, Mullaney, Waldo, & Chuang, 2014). Despite skepticism regarding MOOCs, additional models of credentialing are emerging.

Examples of Alternative Credentialing – Competency Based Education (CBE)

The shift to a knowledge economy is embodied by another form of alternative credentialing – competency based education (CBE) where students demonstrate what they know and have learned in a way that clearly connects learning and work. Although CBE itself is not a new model, online CBE has gained attention as a response to traditional education for adult learners and those with "some college" and no degree. Although there are a number of CBE definitions in use, most definitions typically include a description of the competency and a proficiency scale with accompanying indicating behaviors that describe performance characteristics at each proficiency level (Ford & Meyer, 2015). This is a fundamentally different way to view learning that is based on demonstrated mastery as opposed to "seat time" and learning objective completion.

As mentioned previously, the demands of the workplace have changed and employees are evaluated on what they know and can do as opposed to the completion of

courses and degrees, which is a criticism of traditional postsecondary learning (Bishop, Moriarty, & Mane, 2000). With recent support from the Lumina and the Bill and Melinda Gates Foundations and the United States Department of Education giving approval to encourage experimentation with CBE approaches, it would appear CBE programs have new life (Ward, 2016). However, it is not clear if employers value CBE credentials the same way they do traditional credentials, or if employers find that CBE programs are of quality, or if employers would express a similar level of dissatisfaction that they do towards online degrees.

Current State of Credentialing Summary

In the midst of dramatic labor market changes and technological progress, universities need to be "market smart" while remaining "mission centered" in order to stay relevant in regards to the credentials being offered (Zemsky, Wegner, & Massy, 2005). Conversely, some scholars contend that as postsecondary institutions have become more entrepreneurial, they view education simply as a commodity that can be bought and sold as classic academic values erode in favor of the view that students are customers (Slaughter & Rhoades, 2004). However, as colleges and universities evolve into more complex organizations, they serve an array of stakeholders and accounting for some level of market orientation is exceptionally relevant and increasingly accepted (Kezar & Eckel, 2004). One of the principle purposes of higher education is the transmission of knowledge and certification of credentials, which play an integral role in our society especially at the intersection of learner qualifications and employability.

So the question remains – who should pay for postsecondary education? Should it be the individual because they will get the benefits? In this case, only those with the

finances will be able to pay and the supply of graduates may still not be enough and individuals may still not be inclined to pursue a degree unless there is a payoff in terms of wages. Therefore, one way or another employers are going to need to support education and credential completion. Until employers are willing to make investments without an immediate payoff, we will remain in workforce development purgatory. This investigative study provides invaluable information to the higher education community about the ways in which employers perceive credentials, identify conditions that employers are willing to support credential completion, and shed light on the extent to which employers rely on postsecondary education credentials to prepare graduates for the world at work.

Theories on Credentialing

The President of the Lumina Foundation Jamie Merisotis argues we need to abandon the historic view that postsecondary credentials do not prepare people for jobs and instead he believes higher education must prepare people with the skills they need to adapt as their lives change, jobs evolve, and new opportunities arise (Merisotis, 2015). Postsecondary education must be concerned with employability and educators owe it to their students to prepare them with skills to acquire a productive and satisfying career that they can grow with and adapt to an economy that is impossible to predict (Merisotis, 2015). This is the position this paper takes and the primary argument is that for the labor market and skills infrastructure within the United States to function effectively, employers need to be more active and involved in supporting employee training needs in the form of postsecondary credential completion. This study seeks to better understand what employers think about credentials. In order to fully examine this question, this study

leverages six theories (Credentialist Theory, Filtering Theory, Human Capital Theory, Human Resource Development Theory, Resource Based View of the Firm, and Signaling Theory) which come from different fields and have already been established in the literature, but all represent different perspectives of employers related to credentialing. Considering employers have a multitude of viewpoints, it is important to consider how their options may (or may not be) situated in the pre-existing literature on credentials. Although these perceptions of credentialing have been well established, it is expected some of the findings from this study will come from outside these theories. Identifying support for previous work and new conceptualizations is one way this study would add to the growing body of literature in this area.

Credentialist Theory

Credentialist theory is rooted in the Weberian idea of social stratification as a result of educational credentialing. Weber (1978) argues that "diplomas from universities, business and engineering colleges, and the universal clamor for the creation of further education certificates" restricts the pool of qualified applicants to just the social elite class of those who hold a degree (p. 1000). The resulting impact limits who is qualified for certain occupation thus stratifying the labor market based on academic credentials.

From a socioeconomic perspective, credentialist theory has been distilled to four core elements. According to Daniel Brown (2001) those are (1) the function of a credential is not to denote technical expertise, but instead serves an exclusionary purpose to stratify the labor market based upon degree threshold, (2) credentials create power for degree holders and preclude all those without such authority from questioning the integrity of the skills possessed by the degree holder, (3) credentials are a measure of

candidate trustworthiness, and (4) additional credentials at the top of a credentialing hierarchy may further differentiate and stratify the labor market unless there is an intervention by regulatory agencies to restrict the number of students admitted to particular programs. Advocates of credentialing theory believe humans pursue postsecondary credentials to rise in the occupational strata created by credentialing schema (Brown, 2001). For this reason, candidates pursue a credential so they can be considered in the pool of eligible candidates regardless of whether or not they can do this job successfully without the degree (Brown, 2001).

Filtering Theory

Filtering theory was first introduced as an interpretation of human capital theory. Arrow (1973) argues enhanced productivity from the completion of a degree according to human capital theory could be either from cognitive skills acquired while in school or the development of socialization skills (i.e., time management, completing assigned tasks, successfully engaging in group work, etc.). Regardless of why productivity is enhanced, Arrow (1973) believes that the completion of an education credential does yield higher productivity for employers as a result. According to filtering theorists, the purpose of higher education is not necessarily to prepare individuals to be better equipped for success in a future occupation, but instead higher education serves as a screen to assist employers separate applicants based on relative productivity (Arrow, 1973). More recently, filtering theory has been expanded upon suggesting that credential completion conveys a number of cognitive and non-cognitive abilities which are used by employers to determine qualifications for employment opportunities (Bowen, 2018; Heckman, Stixrud, & Urzua, 2006).

Filtering theory suggests employers make speculative decisions based on the potential productivity of employees and use education as a factor in their decision making. Essentially, filtering theorists argue that college education, probability of success in college and productivity are correlated with one another and relies on the filtering of higher education to validate these assumptions. Employers identify two stages of filtering executed by higher education institutions and programs. The first being who is admitted, where programs and colleges select students based on a set of criteria and those who do not meet that criteria are screened out (Arrow, 1973; Wang & Morgan, 2009). The second stage occurs during college and that as a result of natural attrition, those who lack the necessary capabilities to be successful will drop out and those who have the requisite skills will complete a degree (Arrow, 1973; Wang & Morgan, 2009). Filtering theory is a strong example of another way in which the completion of a postsecondary credential impacts the employment prospects of the degree holder.

Human Capital Theory

The term "human capital" was first popularized by Gary Becker (1962) and is considered the collective skills, knowledge and other assets possessed by individuals used to create economic value. Continuing professional educational suggests there should be a positive correlation between human capital and productivity – for this reason, educational attainment is often prioritized to improve worker capital and organizational outcomes (Chatman, Polzer, Barsade, & Neale, 1998). According to Becker (1962), a person's economic worth is determined by their productivity which is why employers make hiring decisions and determine salaries based on perceived productivity potential. In the case of education, it is perceived by employers that those who hold a credential have a higher

potential for productivity. According to human capital theory it is also believed that those who pursue higher education do so in order to increase their own productivity with the expectation that such an investment will yield an increase in compensation to offset the investment (Becker, 1962, Freeman, 1976; Kerka, 2002; Murphy & Welch, 1992).

Human capital theorists have shown how valuable education is as individuals who complete a postsecondary degree produce more than half the nation's annual economic value, are likely to earn more money, and contribute to the well-being of society (Carnevale, Smith, Melton, & Price, 2015; Hout, 2012). As the economy and credentials themselves are changing, it is imperative to better understand the demands of employers for knowledge, skills, and abilities of their employees. However, human capital theory has been criticized in the past for distilling human behavior into a simple cost benefit analysis because in reality, humans function to do more than just make money (Tan, 2014). In the midst of the information age, a higher degree of technical skills and proficiency in different disciplines is needed to be successful in the 21st century workplace and human capital theory is one lens with which to view this problem.

Human Resource Development Theory

Human resource development theory has its roots in training and development and initially started as a field during the midst World War I and continued into World War II where the United States government ran the Training Within Industry service to address the job training needs of war-related industries (Dinero, 2005). The first modern conceptualization of human resource development theory came when McLagan (1989) presented a wheel illustration which accounted for three separate sections of human resource development theory – training and development (classroom training and

coaching), career development (preparing workers for future jobs and responsibilities), and organization development (addressing issues of organizational structure and change). A revised model was introduced in 2004 that included the same three sections, but also included two other sections including one for human resources management and one for organizational disciplines (Bernthal et al., 2004; Davis et al., 2004). At this point, human resource development was separated from human resources management and organizational disciplines (i.e., production, distribution, marketing, etc.).

While a number of definitions exist, for the purposes of this study, human resource development theory is defined as being "primarily concerned with people's performance in workplace organizations and how those people can strive to reach their human potential and enhance their performance through learning" (Chalofsky, 2007, p. 437). Human resource development theory has theoretical foundation in psychology and human resource development research has been instrumental in investigating the links between learning, performance, job satisfaction, mentoring, motivation, turnover, and profit in organizations at the individual, group, and organizational levels of analysis (e.g., Ferguson & Reio, 2010; McGuire & Cseh, 2006). As the development of new products or processes require changes in workplace procedures, it is critical for organizations to adequately train their workers to manage those procedures (Stubblefield & Keane, 1994). With this in mind, the more organizations invest in research and development to develop innovation, the more that is required of training and development to maintain and sustain innovation (Reio & Batista, 2014). Human resource development theory is important for the current study because it considers the development of employees and their behaviors as integral to organizational success (Passmore, 1997). In sum, human resource

development theory provides a rich theoretical and empirical base to draw upon for considering the role of learning, performance, and change in the workplace.

Resource Based View of the Firm

Theoretical work in the field of business strategy by Barney (1986; 1991; 1995) on the resource-based view of the firm indicates human resources can generate a sustained competitive advantage by creating value in a way that is both rare and difficult for competitors to imitate. Barney (1991) suggests firms cannot purchase sustained competitive advantage and that sustained competitive advantage can only be achieved by utilizing the rare and non-substitutable resources that are already under firm control – employees. Previous research advocates there is a clear consensus that human factors are the key mediator between human resource practices and firm performance (Batt, 2002; Ramsey, Scholarios, & Harley, 2000; Takeuchi et al., 2007). Within the resource based view of the firm, turnover, productivity, training, and selection, have all been associated with improved corporate financial performance and sustained competitive advantage (Barney, 1991; Huselid, 1995; Delaney & Huselid, 1996).

According to the resource-based view of the firm, not all employees possess equal knowledge and skills, which revealing employees do not contribute at the same level (Lepak & Snell, 1999; Wernerfelt, 1984). This inherently suggests by investing in an individual's knowledge, skills or abilities the firm would be able to reap productivity gains from that individual which will have a positive impact on firm performance. This has been supported by Hora (2016) who found workplace training was more likely to be endorsed if the training cultivated firm specific capital which improved the long term employee productivity. The introduction of this theory offers a sound theoretical

explanation as to why superior human capital contributes to a sustained competitive advantage and superior firm performance (Barney, 1986; Lippman & Rumelt, 1982). Previous research suggests firm specific human capital is 71 percent stronger than other equivalent human capital that is available in the external labor market (Crook et al., 2011). Thus, firm specific human capital is more strategic in nature and produces greater value when compared to general human capital. The resource based view of the firm is another theory related to credentialing which may account for firm behavior which is why it is important to include in this work.

Signaling Theory

Consistent with human capital theory, Michael Spence (1973) explains how individuals are rational and invest in education as long as the benefit of additional years of schooling exceeds the cost. Spence (1973) generally agrees with human capital theory in that individuals are typically evaluated based on their perceived productivity, but signaling theory differentiates itself from human capital theory. Signaling theorists argue that employers can only speculate on the productivity of the individual and employers rely on other signals to make an educated guess on the productivity of employees. For this reason, signaling theory is based on the notion that hiring decisions are based on what information is available to employers at the time hiring decisions are made. This is an important consideration because Spence (1973) distinguishes between unchangeable signals (i.e., race, age, etc.) and those that are subject to change (i.e., highest levels of educational credential achieved).

In the case of higher education, the postsecondary institution signals to potential employers that the individual has a particular level of ability or expertise. In general, this

implies the value of the degree comes from the belief that the employers think the credential has a positive impact on employee productivity. In addition, signaling theory implies that the social returns of education could be lower than the private returns (Spence, 1973). As stressed by Weiss (1995), higher education providers may enhance learner post school productivity by acting as a signal about their innate abilities. This implies students make decisions and choices in pursuing a postsecondary education as a result of what the credential will provide them in terms of economic and productivity gains post completion. Signaling theory is another explanation for the purpose and role of higher education in the external labor market.

Theories on Credentials Summary

The six theories that have been identified and described here illustrate the broad nature of this study and the variety of ways to examine questions of employer sponsored adult degree completion and employer perceptions of postsecondary credentials. The fact that these theories tend to be discussed in a vacuum based on discipline showcases the interdisciplinary nature of this research project. Furthermore, accounting for the ways in which this research is accounted for in overlapping fields enhances the relevancy of this work. Focusing on the future, it is apparent that the nature of work is changing and the types of knowledge, skills, and forms of credentialing that will be required in the future will be different, but what is unclear, is the ways in which these future professionals will be credentialed and why employers may support some forms of credentials and not others. These theories will ultimately be used to deductively code the data while being open to consider new possibilities that do not fit. Ultimately, the theories that have been previously identified here serve to provide a theoretical foundation for this work and

supports my assertion the additional clarity is needed surrounding employer motivations for supporting adult degree completion and a better understanding of employer views on the current system of credentialing.

The Employer Perspective

Much of the literature on degree completion has focused on the evolving purpose of education, what employers want from graduates, and one very recent study has focused on return on investment as it relates to employer-supported degree completion. The changing nature surrounding educational credentials centers around a single question: What is the purpose of postsecondary education and credentials in today's society? Is the purpose to get students employed (the vocationalist perspective) or is it to develop moral character, a sense of civic responsibility and strong intellectual skills (the liberal arts perspective)? While the focus of this study is on adults, the perception that higher education serves as a training ground for employers has implications for the education and continuing education of adults in the eyes of employers. The disconnect between graduates who cannot secure employment and employers who cannot find the talent they desire suggests the divide between education and employment is real and prevalent (Mourshed, Farrell, & Barton, 2012; Stokes, 2015). This may be one reason employers are hesitant to support adult training which results in postsecondary degree completion because they do not believe credentials will enhance productivity in the workplace. Thus, there is a real need to better understand how employers view adult credential completion in order to adequately support adults in completing and obtaining postsecondary degrees and certificates. An alignment between non-credentialed adults and employers could enable higher education to play a more meaningful role in

supporting local and regional community needs in the form workforce development especially as it relates to innovation and credential completion.

Despite the attention that has been paid to degree completion and the importance of credentials, scholarship is still emerging in this area as it pertains to the role of employers in degree completion. The focus of this section is employers themselves. Scholarship from Peter Cappelli, Matthew Hora, and the Lumina Foundation will be highlighted here as it represents some of the foundational work in employer-supported degree completion. Reviewing their work and landmark studies will show that progress has been made, but the pertinent questions identified by this study have been understudied and to some extent, unexamined entirely.

Employers and Credentialing – Training Gap or Skills Gap?

The notion of a "skills gap" has garnered significant attention and, according to Hora (2016), over 3,200 newspaper articles and 2,200 journal articles have mentioned the "skills gap" and a majority of those have been published within the last decade. Peter Cappelli a Management Professor at Wharton and Director of Wharton's Center for Human Resources has written extensively on changes in employment relations in the United States and their corresponding implications. In *Why Good People Can't Get Jobs* Cappelli (2012) addresses the skills gap and argues while there has been an inordinate amount of attention paid to the lack of available talent, surprisingly little attention has been paid to sagging investments in employee training. Since 2006, the same 10 positions have been identified as the most difficult to fill – technician, sales representative, skilled trades, engineer, laborer, management executive, accounting and finance staff, information technology staff, production operations, and office support (Manpower,

2016). This consistent pattern in difficult-to-fill positions does not provide much evidence that would explain the skill shortage complaints. Cappelli (2012) goes on to argue that the issue is not a skill gap, but a training gap. In 1979, workers received an average of two and a half weeks of training per year and by 1995, that figure had dropped to 11 hours and was mostly focused on workplace safety (Cappelli, 2014a). More recently, a separate study revealed only about 20 percent of employees received any employer training in the past five years (Smith, De Leon, Marshall, & Cantrell, 2011). While employer training has become uncommon, employer practices have also changed. Cappelli (2012; 2014b) believes that employers themselves are implicated because employers have relied more on hiring external employees, withdrawn investments or eliminated internal training programs, and rely on human resource information systems to filter applicants (which results in credentials being view in a single dimensional way), and believe it is the duty of higher education to respond to signals in the external labor market. For these reasons, examining employers themselves is a worthy unit of analysis and supports their inclusion in this study.

Not only are filling current vacancies important, but it is also vital to consider what type of skills and competencies will be required for workers in the next decade which will likely consist of technical and non-cognitive capabilities. This question remains largely understudied (Hora, 2016). When considering the notion of a skills gap, there are six key assumptions that have been identified by Hora (2016): (1) employers are having a difficult time finding skilled workers, (2) technical skills utilized in specific occupations are what industry needs, (3) the focus of education should be on middle-skill jobs that don't require a four-year degree, (4) postsecondary curriculum and liberal arts

are the primary causes of the skills gap, (5) the skills gap is a technical problem best addressed through the development of academic programs, and (6) the focus of change should be on one sector – education. These assumptions are critical when considering the present study because they assume that postsecondary education should respond to the "signals" of industry while employers themselves bear little responsibility. Despite the significance of this topic, little empirical work has been undertaken to study this issue further especially as it concerns the exploration of employer motivations which would provide contextualized accounts from those most closely involved.

Underlying Issues – The Value of 21st Century Skills

Matthew Hora is an Assistant Professor of Higher Education at the University of Wisconsin – Madison and a research scientist at the Wisconsin Center for Educational research. In a 2016 publication *Beyond the Skills Gap*, Hora met with 77 educators at two and four year colleges and universities and 75 human resource managers and directors to understand their experiences with the labor market, understand what types of skills they value, and identify what training employers provide. Within this multidimensional study, Hora focused on the ways in which students acquire new competencies. His work also supports the notion that few employers provide any formal training and that employers are primarily screening for "technical skills" and "cultural fit" during the hiring process (Hora, 2016). Similar to Cappelli, Hora (2016) believes the business sector shares some responsibility for the skills (training) deficit and employers should bear some of the burden for adult employee credential completion. Another pertinent finding was that employers themselves did not question the ability of postsecondary education to prepare students technically, but instead employers were concerned about the educational

system's ability to cultivate the broad-based liberal arts skills that are needed to succeed in today's global economy (Hora, 2016). This conclusion is also supported by other research that reports that over 96 percent of all occupations rank ability to think critically as either "very important" or "extremely important" to their jobs, which underscores the fact that liberal arts competencies are often overlooked in discussions about employer needs and the skills gap in general (Carnevale, Smith, & Strohl, 2013).

Why Some Companies Retrain and Others Do Not

Today, limited case studies exist examining why employers do or do not support employee degree completion, but with the reports that do exist there is general consensus that employers retrain when they can do so faster than they would be able to hire and when labor market conditions make hiring from the external labor market challenging (Cappelli, 2004). Becker's (1962) work on employer-supported training argues that employers find it difficult to provide training or retraining that would also be useful to competitors, unless employees shared the costs. Despite this research, the question remains as to what motivates an employer to support non-credentialed employee postsecondary degree completion and whether the potential acquisition of firm-specific or general skills influence that decision and if so, to what degree. This is one aspect of adult employee postsecondary credential completion this study seeks to explore.

Considering retraining itself is important because employers essentially have two options when position requirements change – (1) lay employees off who are no longer qualified and hire new workers who already possess those skills or (2) invest in workers who would otherwise be at risk of losing their job (Asbrand, 1993; Kennett, 2013). In a study considering these two choices, Cappelli (2004) found employers retrain workers in

part to preserve the social capital that exists. These findings were based on a Census Bureau survey of employment practices where the survey asked whether the employer retrained workers who would have otherwise been laid off due to economic changes and if the skill requirements for the job had risen (which suggests retraining if the employee is retained) or not. Cappelli (2004) argues that social capital is an asset that exists between individuals rather than within each individual and the value of this social capital extends beyond the ability of the individual to perform their current job. This study was predominately quantitative in nature and speaking with employers directly about these issues may provide specific evidence as to what factors employers consider when determining whether or not to support degree completion. Even at the time, Cappelli (2004) called for future research to explore this question further and one way in doing so is to speak with employers themselves about these questions and challenges.

Considering the Cost of Training and Employee Development

As alluded to by Cappelli (2012), one reason employers may have abandoned traditional employee training and employer-supported credential completion is because such training is expensive, slow, and ineffective in light of the pace of technological advancement. So instead, employers seek to hire candidates from the outside who have the skills prior to being employed which may be a solution for the short term, but has limited long term sustainability. In an influential 2009 report, the Business Roundtable commission revealed that 76 percent of employers responding indicated that they did not retrain because of costs. In 2015, employers in the United States spent $177B on formal learning and talent development, but just 10 percent of that was used on tuition assistance to promote access to postsecondary degrees and credential completion (Carnevale, Strohl,

& Gulish, 2015; Miller, 2014). Tuition assistance programs are typically categorized with other employee benefit programs and in the past, a very small percentage of organizations (5 percent) have evaluated tuition reimbursement from a return on investment perspective (Robbins, 2008).

Employers in the Business Roundtable (2009) commission survey also revealed employers did not want to risk investing in employees who may leave the company after they have completed their education. While employee turnover is certainly a consideration, this fear is compounded by the fact that very few employers are providing employer-sponsored training at all (Cappelli, 2012; Hora, 2016). The Business Roundtable (2009) survey also suggests 81 percent of employees were willing to get training even if it was on their own time. Another reason employers remain skeptical about the benefits employer-supported training is because they are concerned whether or not those skills will still be relevant in the future (Cappelli, 2012). While training itself can be expensive, the cost of turnover can be even greater.

A paper from the Center for American progress analyzed 11 published papers on the topic over a 15 year period and determined the average cost to a company of turnover for a skilled job is 213 percent of one year's completion for the role (Boushey & Glynn, 2012). These costs include the cost of hiring a new employee (advertising, interviewing, hiring, onboarding,), lost productivity, lost engagement, and training. Bersin (2013) claims employees are appreciating assets that produce more and more value over time which helps explain why losing employees can be so costly. Cappelli (2012) also found that organizations underestimated the cost of employee turnover when considering the cost of employee education and retraining.

The Difference Between Training and Educating

In the broader consideration of skills, jobs, and higher education, a distinction is not often made between training and education. Training is the "direct instruction of how to perform a specific task such as pipefitting, welding a T-joint, or operating Microsoft Word" (Hora, 2016, p.100). Training is typically shorter in nature and has been considered unlikely to develop the knowledge, skills, and abilities that are in demand for 21st century positions. Educating on the other hand is the cultivation of deeper learning and habits of the mind that will serve students throughout their lives (Hora, 2016). One of the primary distinctions between these two terms is the time requirement. Technical skills can be acquired in a short-term training session, but these are likely to be less transferable because they are usually focused on mastery of a single task that is applicable in a limited number of settings. Educating is just the opposite. I argue that this distinction is critical and understanding what types of training employers on and support (short-term technical vs. long term conceptual) has meaningful implications for the future of education. For example, if business relies on workers trained in short-term programs or the government begins to deemphasize longer-term degree completion in favor of certificates, badges, or boot camps the United States may fall even further behind the global learning curve.

Lumina and Cigna Case Study – The Talent Investment Pays Off

Employer concerns over training costs are not a recent development. In 2016 Lumina partnered with Cigna, a global health service company with 31,000 employees to investigate employer return on investment with regards to credential completion. While there is employer interest in tuition reimbursement programs, employers want to see the return on investment. This is evident because according to 2010 ROI Institute Survey of

96 Fortune 500 companies, 96 percent of CEOs stated they were interested in understanding how investments in employee credential completion impact their learning and development initiatives. For these reasons, Lumina partnered with Accenture to facilitate a study to of Cigna's Education Reimbursement Program for the return on investment.

This study considered a two year period from 2012 to 2014 and during this time, 2,200 employees participated in Cigna's Education Reimbursement Program which provides up to $8,000 annually for graduate courses and $5,250 for undergraduate courses or coursework towards a certificate. As part of this program, Cigna also reimburses employee application, registration, examination, and graduate fees. A majority of employee participants were female (77 percent) and most participants pursued an associate, bachelor's or master's degree. To calculate return on investment, Accenture accounts for the total benefit (i.e., impact to revenue (productivity and indirect benefits) and costs (operational costs and talent management costs) while subtracting that from total investment (i.e., training costs and opportunity costs) (Lumina Foundation, 2015). Using a logistic regression to calculate the benefit or loss from those who participated versus those who did not, Accenture found $10M in turnover savings and an overall return on investment of 129 percent (Lumina Foundation, 2015). In addition, those who enrolled in the tuition reimbursement program were 10 percent more likely to be promoted, 8 percent more likely to be retained, 7.5 percent more likely to receive a transfer, and on average, each participant received a 43 percent wage increase over the three year period compared to non-participants (Lumina Foundation, 2015). These gains were even larger among Cigna's entry level employees. To date, this is the first study of

its kind to consider employer benefits from supporting employee credential completion from a return on investment standpoint.

While this study does have some promising results, there are a number of opportunities still to explore. Cigna is a very large employer with operations across the globe and it is unclear if these findings would also apply to small to mid-sized companies who are contemplating supporting employee credential completion. As a result of this study, Cigna increased the undergraduate tuition financial support by 95 percent and the graduate tuition percent by 50 percent. While it is not clear why there is a disparity, increasing the investment in undergraduate education suggests the return on investment for those funds may have been higher than for graduate investments. In addition, although Cigna's program does support adult degree completion, they also supported employees who already had a postsecondary credential. While return on investment is a concept familiar to employers, articulating exactly what goes into that figure from a learning and talent investment standpoint may not be universally agreed upon by employers. For this reason, it is important to consider and gather information from employers directly to identify what factors they consider when contemplating supporting employee degree completion. The present study seeks to expand on this study by taking a qualitative approach to identify what employers view as the broader purpose of credentials.

Employer Perceptions Summary

Previous research conducted by Peter Cappelli, Matthew Hora, and the Lumina Foundation showcase adult postsecondary degree completion and employer involvement is an increasingly relevant and important area of inquiry. As technology and automation

eliminate the need for human labor to carry out lower level manual and routine tasks, there is a growing need for workers with higher levels of education who have college-level skills in problem solving, critical thinking, and communication to be successful in the 21st century workplace (Autor, 2014). For these reasons, understanding what employers view as the purpose of credentials is of paramount importance. While progress has been made in better understanding adult degree completion, further investigating employer motivations and perceptions remains a topic that is understudied. Considering that the notion of a skills gap has been questioned by a number of scholars in favor of a training gap, one wonders why employers are not interested in furthering the education of their own employees to support their own needs? If the skills gap was as prevalent as some suggest, employers should be willing to pay more to acquire those skills. However, rising wages have not been linked to occupations identified with the skills gap (Krugman, 2013). For these reasons, better understanding employer perceptions of credential value, reasons why employers support degree completion, and in what ways employers believe it is their responsibility to educate and prepare employees is worthy of further study.

Summary of the Literature Review

Improving postsecondary completion (i.e., degrees and certificates) among adults continues to be a problem that attracts national, regional, and local interest. While demands for postsecondary credentials are reaching unprecedented levels, there is a growing need to improve adult degree completion (Carnevale, Smith, & Strohl, 2013). In Michigan, the problem of educational attainment is particularly dire as only 35 percent of residents hold a degree or higher which is well below the national average of 40 percent (Austin, 2015). In a recent report, the Lumina foundation suggests employer-supported

education is instrumental in assisting employees to obtain postsecondary credentials (Merisotis, 2016). Lumina places an emphasis on scholarship investigating the relationship between employer educational assistance and employees because adult attainment is becoming increasingly important. This is supported in another study featuring Cigna (a $38B health care employer with 2,200 employees), which reveals employees who participate in such programs see their income grow by 43 percent and Cigna claims the return on investment is worth it (Lumina Foundation, 2015). Meanwhile, new forms of credentials are arising and it is unclear why employers support adult employee continuing education – specifically, degree completion. Better understanding employer motivations for supporting degree completion, in what ways employer believe they are responsible for educating employees, and what employer perceptions are regarding the broader purpose of credentials are critical areas this study seeks to investigate.

METHODS

In this section, following an overview of the problem, purpose, research questions, and theoretical framework for my approach, I will explain my plans for a case study rooted in Michigan based on interviews with manufacturing employers. The qualitative data gathered from guided interviews will be complemented by document analysis featuring personnel manuals or employer handbooks used by the manufacturing organizations. Leveraging two sources of data will help crystalize the findings and identify what, if any, disparities and or commonalities are present between what employers profess and what is documented as it relates to the research questions (i.e. perceptions of credentials, motivations for supporting continuing education, and barriers to adult enrollment).

Overview of Problem, Purpose, and Questions

With the advent of technology, the demands of the workplace have changed over the past several decades and employers now rely on employees with advanced educational credentials, knowledge, skills, and abilities (Powell & Snellman, 2004). To address the shortage of degree holders in the United States, the Lumina Foundation initiated a degree completion initiative (Goal 2025), which calls for 60 percent of Americans to hold a degree (bachelor's, associate's, or certificate) by 2025 (Merisotis, 2016). While it is important for "traditional age" students to enroll in some form of postsecondary education, this alone will not be enough to meet the 2025 goal, as more adult students must pursue or complete a degree to meet this attainment goal (Carnevale & Rose, 2011; Carnevale, Smith, & Strohl 2013; Merisotis, 2016). The Lumina Foundation has partnered with a number of states and private and public organizations in

an attempt to meet this goal, and have recently expanded this outreach to employers as well. Michigan is not among the states that have partnered with the Lumina Foundation. In a recent report, the Lumina Foundation suggested employer-supported education would be instrumental in helping Americans obtain postsecondary credentials and meeting Goal 2025 (Lumina Foundation, 2016). While this seems like a logical and mutually beneficial partnership, little scholarship has investigated the perceptions of employers themselves.

While technology has in part increased the number and types of credentials, it is unclear how these "new" credentialing models may support the needs of employers or if employers even value these credentials. Although there are a number of studies that show the importance and value of completing a postsecondary degree (Barton, 2008; Carnevale & Rose, 2011; Carnevale, Smith, & Strohl, 2010; Carnevale, Smith, & Strohl, 2013), few studies have investigated employer motivations in supporting degree completion and the ways in which the current postsecondary educational ecosystem meets employer needs for adult employee education. For these reasons, there is an opportunity for a multidimensional and original research project to investigate employer motivations for supporting degree completion, employer perceptions of the current state of credentialing, and better understand employer perceptions of barriers to employee postsecondary enrollment. As a reminder, to investigate this topic, this study utilizes the following research questions:

- **RQ1:** What do employers think about postsecondary credentials (e.g. their purpose, value, etc.)?

- **RQ2:** How do employers support employee continuing education and degree completion?
- **RQ3:** What are employer perceptions of employee barriers to taking advantage of employer supported continuing education opportunities?

Theoretical Framework

As was established in the literature review, this multidisciplinary study relies on literature from a number of fields including higher education, business, human resources, management, training and development, industrial organizational psychology, and workforce development. Given the overlapping fields of scholarly inquiry and the exploratory nature of this study, an integrative deductive conceptual framework is used. This conceptual framework consists of six different theories of credentialing (credentialist theory, filtering theory, human capital theory, human resource development theory, resource based view of the firm, and signaling theory) and degree completion that have been well established in the literature. The individual theories will be used as lenses and categories through which to filter the data. While the data gathered may not perfectly fit into a single category, it provides a starting point for analysis and interpretation while accounting for some of the previous scholarship in this area.

Research Paradigm

A constructivist interpretivist approach is adopted to guide the research questions for this exploratory case study, which seeks to understand manufacturing employer perceptions of credentials, motivations for supporting employee degree completion, and better understanding employer perceptions of factors that prevent staff from enrolling or reenrolling in postsecondary programs. The constructivist approach was selected because

it explicitly seeks to understand how individuals make meaning from the world in which they live and work (Creswell, 2013), which is a primary goal of this study. This paradigm was also selected because of the belief that there are many truths to the questions under study and that reality is subjective and constructed by the individual themselves (Lather, 2006). Given that participant meanings are believed to be multiple and varied according to the constructivist paradigm, this research seeks to better understand the complexity of these participant views. For this study, the case is the State of Michigan and is the environment in which the manufacturing employers operate. Because of the relative openness of the constructivist paradigm, the research questions were crafted to be intentionally broad and general so participants can construct their own meaning and accurately describe their perceptions of the situation. Included in the research protocol are the prompts associated with the guided interview to ensure specific information is addressed by each participant. The ultimate goal for this study is to make sense of the meanings the participants have about the world around them as it relates to education, credentialing, and employability of their experienced adult staff.

Open-ended questions will be asked so participants can share their views on employer-supported employee education and the current system of credentialing. Examining the social context of career outcomes and postsecondary degree attainment is also a critical component that will be accounted for with this approach, as this may have a significant influence on how employers develop meaning. This paradigm was selected because of three core constructivist assumptions: (1) the belief that participants construct meanings as they engage with the world, (2) humans make sense of their world based on their historical and social perspectives, and (3) the generation of meaning is social and

arises out of interaction with the community (Crotty, 1998). This results in a primarily inductive intake and allows for meaning to be generated from the data collected in the field. This data is then compared and contrasted with the six different theories contained within the deductive framework. In summary, open-ended questions are asked in accordance with the constructivist framework so employers can share their views on credentials, how they support employee credential completion, describe the barriers the see as preventing adult employees from completing postsecondary credentials.

Research Strategy – Case Study

The case study approach involves a select number of Michigan manufacturing participants and examines the unique characteristics of each and considers how the organizational factors may also influence the results. The purpose of this empirical inquiry is to develop a more detailed and nuanced set of information as it relates to employer supported education and degree completion. Case studies are often utilized in books and articles in the fields of psychology, anthropology, sociology, history, political science, education, economics, and management (Flyvbjerg, 2011). Within the field of education, researchers use case studies to develop in-depth analyses of a program, event, activity, or process (Creswell, 2013). Case studies are valuable when attempting to portray and interpret the uniqueness of real situations though accessible accounts of individuals in order to understand the complexity and situatedness of behavior (Cohen, Manion, & Morrison, 2013). Because the present research focuses on a specific phenomenon within a bounded system (i.e., employers/organizations) within Michigan, a case study research strategy is a worthy and valuable approach. For the purposes of this study, manufacturing employers in the State of Michigan is the case under study.

While case studies are typically defined as a single instance in a bounded system such as a classroom, a school or a community (Creswell, 1994), not all would hold such a strict definition. For example, Yin (2009) argues that the boundary between the specific instance under study and its context is blurred because a case is a study of a situation in a context. Thus, it is important to set the case within its context. For this reason, rich descriptions of the educational and employment context in Michigan and manufacturing in general are specifically are highlighted to underline the importance of context. The case study as presented and pursued here does not fit the more traditional bounded approach, but I argue it does not have to (Verschuren, 2003). Despite this less traditional approach, the present work does rely on some established theories to provide a framework with which to better understand manufacturing employers in Michigan. This work does provide a unique example of real employers in real situations which enables researchers, scholars, foundation program officers, policymakers, and other stakeholders in higher education to better understand ideas more clearly than by presenting abstract theories or principles. It is this aspect of a case study this work that does adhere more closely to the traditional model of a case study. The case study approach is also valuable as described here because it allows for the research to penetrate situations in ways that are not always susceptible to abstract or numerical analysis.

Furthermore, Verschuren (2003) reports that a distinguishing aspect of a case study research is "holism" rather than "reductionism." Yin (2009) argues that "holism" refers to conducting research at a single unit of analysis (i.e. an induvial, group, or organization), but in the case of Verschuren (2003), the term "holism" does not necessarily refer to a whole subject, person, or group, but it does require one to focus on

relevant areas of interest. Verschuren's (2003) description of what holism constitutes is what has been adopted for this work as the area of interest is the state of Michigan and manufacturing employers themselves. This distinction is critical because case studies can establish a cause and effect for better understanding how and why something is happening. However, in order to accurately describe the how and why of the subject of interest, it is imperative to recognize that context is powerful in determining both causes and effects. In the present case, better understanding adult degree completion in Michigan is within a complex context that includes adults themselves, manufacturing employers, higher education programs, the external labor market, and a host of other factors. Hitchcock and Hughes (1995) even argue that case studies are distinguished less by the methodologies that they use than by the subjects of inquiry which is why there is frequently overlap between case studies and interpretive methodologies. This description would accurately describe the work of this study and the ways in which the case study approach has been utilized. This study recognizes that a whole is greater than the sum of its parts and for this reason, this study emphasizes both traditional and non-traditional defining features of a case study.

Case Study Justification – The State of Michigan

Utilizing a case study approach is consistent with the goals of this research, which are to explore employer perceptions as they relate to the broader value and purpose of credentials in the workplace in the State of Michigan. Michigan itself is a unique case because of the strong presence of a manufacturing culture that has not traditionally relied on education or training beyond high school in order to secure a strong workforce that offers a stable middle-class lifestyle. In addition, over 22 percent of the Michigan

workforce has “some college” but no degree and if Michigan’s labor force maintains their current levels of educational attainment and based on future labor market requirements, the deficit between human capital and skills required by employers will continue to grow to unprecedented levels (Austin, 2015). Despite national, state, and local emphasis on increasing postsecondary attainment, Michigan employers have a hard time filling middle skill vacancies (The Workforce Alliance, 2009). This is especially troubling as middle skill positions make up about 49 percent of Michigan’s positions and represent the largest share of future openings and a large number of these openings are in manufacturing (Achieve, 2012).

A recent report on educational attainment in Michigan revealed the state ranks 38th in the nation in personal income and has seen individual income fall over the last decade in every region in the state (Austin, 2015). From an attainment standpoint, only 35 percent of Michigan citizens hold an Associate’s degree or higher which is below the national average of 40 percent in conventional degree attainment (Austin, 2015). Research by Austin (2015) which has examined Michigan’s current and future labor market requirements suggests that any strategy for increasing postsecondary attainment in Michigan must also consider the changing demographics of Michigan’s population. Looking first at age, the fastest growing and largest population in Michigan’s workforce is senior and older workers ages 65 and older (Austin, 2015). Not only is labor force in Michigan aging, but not enough younger workers are coming to Michigan to work or moving through the educational pipeline to replace these older workers. Michigan’s population is also becoming more racially diverse with Black, Hispanic, Asian and Non-White populations growing in all of Michigan’s regions (Austin, 2015). While Michigan

is become more racially diverse, Blacks, Hispanics, and Native Americans are 16-18 percent behind Whites in achieving a postsecondary credential (Austin, 2015).

The lack of postsecondary credentials among Michigan's diverse growing population certainly poses challenges, but Michigan also has one of the fastest declining young adult and high school graduate populations in the county (Prescott & Bransberger, 2012). Meanwhile, Michigan has one of the highest shares (25 percent) of adults in the workforce with some college, but no degree or postsecondary credential. Michigan is one of six states to see a reduction of high school graduates of 15 percent or more (Prescott & Bransberger, 2012). No other states is facing such a deficit and sustaining critical educational infrastructures will be a major challenge. While Michigan has 124,000 high school graduates in 2007-08, only 86,000 are predicted to graduate in 2027-28, representing a 29 percent drop (Prescott & Bransberger, 2012). Although the total number of high school graduates is predicted to decline, Michigan is expected to graduate a higher proportion of Asian / Pacific Islander, Black, and Hispanics while White graduates are expected to decline. Similar to other states across the country, the reshaping of the public high school graduating class is not unique to Michigan. However, this diversification will put an increased pressure on the region to overcome a history of educational attainment gaps to ensure these graduates are ready for college or work. Based on our current understanding of the Michigan workforce, with fewer and fewer qualified workers entering the labor market, there is more pressure than ever for experienced employees to have the knowledge, skills, and abilities to be successful in Michigan's 21st century economy. For this reason, better understanding manufacturing employer perspectives in Michigan is critical and worthy of immediate study.

Considering this study seeks to explain how (and in some cases why) employers behave (through their human resource practices) in certain ways towards employee education, training, development, and degree completion, a case study perspective provides more specific and valuable insights than speaking with a larger group of employers in multiple industries or in scattered geographic areas. With this strategy, a chapter will be written on each research question focusing on individual employer practices as they relate to the purpose of credentials, continuing adult employee education, and employer insights regarding the identification of barriers related to employee continuing education. Within the chapters dedicated to each research question, the relationship between employer human resources practices and talent acquisition, training, employee education, compensation, employee development, and performance management, among others, will be reviewed through interviews and information from personnel manuals. A final chapter will conclude with the identification of commonalities across the employers, and a set of recommendations will be developed as they relate to the research questions under study.

Research Design and Rationale

Qualitative research is interpretive in nature, grounded in the lived experiences of the participants, and primarily relies upon the collection of non-numerical data (Glesne, 2015). To answer the research questions, the qualitative approach of interviewing through case studies will be used and open-ended questions will facilitate better understanding of participant meaning. The interview questions will focus on employer perceptions of the phenomena of the current and future state of credentialing, degree completion, and barriers to adults attaining a postsecondary degree. This approach was selected because it

will account for individual values and be inclusive of the participant context. In order to better comprehend individual perspectives, interviewing and the transcription of the interviews is used as the primary mode of data generation for analysis.

According to Patton (2002), the purpose of interviewing is to allow researchers to take on the perspective of another individual, which directly aligns with the goal and purpose of the present study. Patton (2002) also argues that the quality of the information obtained is dependent upon the quality of the interviewer and for these reasons a number of "high quality" information gathering practices have been adopted. For example, while there are a number of different ways one can interview, the use of an interview guide has been selected, which consists of a set of questions or issues to be explored over the course of the interview (Patton, 2002). The interview protocol and interview questions are included in Appendices A and B. An interview guide was selected to make optimal use of the participant's time and explore questions in a systematic manner. This approach is primarily structural in nature and ensures a select number of central questions (i.e., the primary research questions) and sub questions are covered to obtain data on specific topic areas (Miles & Huberman, 1994).

The guided interview approach was selected because the topics of inquiry have been specified in advanced and while the interviews will be conversational, the guide will ensure the same material is covered across all the participants (Patton, 2002). Conversely, one possible weaknesses of this method is that important topics may be inadvertently omitted and lack of interview flexibility in wording questions may draw different responses from different participants (Patton, 2002). In building the questions in Appendix B, several different types (feeling, knowledge, sensory) of questions were

included to better understand participant intentions, desires, and expectations (Patton, 2002). Furthermore, qualitative methods and interviewing are used in this study because they align with the research paradigm (constructivist / interpretivist) adopted for the study. To crystalize the findings, the interview data will also be supplemented by document analysis.

When available, personnel or employment manuals have been gathered for document analysis and included in this study. Document analysis is a "systematic procedure for reviewing or evaluating documents – both printed and electronic" (Bowen, 2009, p. 27). In this case, a specific type of document (personnel manuals) will be requested and analyzed in order to develop major themes, categories, and case examples through content analysis in support of the research questions identified in this study. Considering my background as an experienced human resources consultant, I am well-versed in human resources rhetoric and will focus my attention on relevant practice around recruiting, promotion, employee training / continuing education (and eligibility), and compensation. Accounting for human resource factors in addition to organizational history and mission will assist in yielding valuable findings as it relates to employer motivations for supporting employee education and to better understand how employers view credentials and make decisions regarding employer supported continuing education.

Previous research supports the inclusion of document analysis as a technique that is often used in combination with other qualitative methods as a means of triangulation – "the combination of methodologies in the study of the same phenomenon" (Bowen, 2009; Denzin, 1970, p. 291). Similar to other qualitative research, this method was selected to elicit meaning, gain understanding, and develop empirical knowledge (Corbin & Strauss,

2008; Rapley, 2007). Document analysis is valuable for the present study because it can be used as evidence to corroborate what is shared by participants. Bowen (2009) identifies a set of additional advantages including efficiency, data availability, cost-effectiveness, lack of obtrusiveness and reactivity, stability, exactness, and coverage. Furthermore, document analysis provides context into the exact language and terminology used by employers as it relates to employer supported education and degree completion. This information can assist in understanding the conditions that influence the phenomena currently under investigation and can lead to the identification of other questions that need to be asked of participants. Ultimately, by examining information collected through multiple methods, findings can be corroborated across data sets and reduce the impact of biases that can exist in a single study (Bowen, 2009; Patton, 1990).

Research Site and Sample Selection

As identified in the research questions, the site selection is primarily dictated by the study's interest in examining manufacturing employers in the state of Michigan. This is consistent with previous site selection approaches pioneered by Marshall, Rossman, and Rallis (1998), which argue research questions should guide the site and sample for research. In total, six sites were selected for this case study and all employers but one are considered manufacturing employers with the lone exception being a manufacturing association. The inclusion of a Michigan Manufacturing Association was an intentional one in order to better understand the broader manufacturing credential landscape in Michigan. This particular association was also selected because they sponsor and organize an educational academy for manufacturing careers where individuals can complete a number of courses in order to complete a postsecondary certificate or

apprenticeship program. In many cases this education is created, supported, and recommended by manufacturing employers themselves.

In general, the foundational characteristics of study participants are their status as full-time employees, working for an a manufacturing employer based in Michigan, the employer is non-union, the employee's job function include management or oversight of the human resources function (or at minimum participation, influence, or knowledge of human resource functions), and have held their position for three years or more. Participants were contacted through a number of Associations such as the Small Business Association of Michigan, Michigan Manufacturer's Association, Michigan Community College Association, and Business Leaders for Michigan among others. Originally, 18 employers were contacted to participate in this study and six ultimately agreed to meet with me. Of those who elected not to participate, seven did not respond to multiple request via e-mail or phone and five shared they did not have time available to meet with me. Once an initial interview was conducted with the individual initially contacted I frequently asked if there were others who might provide another perspective or valuable insight into my study which enabled me to collect data from multiple individuals at some sites. The sampling decision for this qualitative study is purposeful rather than random in order to gather data as they directly relate to the questions under study (Miles & Huberman, 1994). The titles held by the individuals at each of the employers are as follows:

- Employer 1
    - President / Owner
    - Human Resources Manager
    - Controller
- Employer 2
    - Human Resources Manager – SE Michigan

    - Human Resources Manager – SW Michigan
- Employer 3
    - President / Owner
    - General Manager
    - Human Resources Manager
- Employer 4
    - President / Co-Owner
    - Vice President of Operations / Co-Owner
    - Plant Manager
- Employer 5
    - Controller
    - Production / Operations Supervisor
- Employer 6 / Association 1
    - Executive Director

Prior to identifying, contacting, or conducting interviews with survey participants, this study obtained approval from Michigan State University's Institutional Review Board (IRB). Permission from the IRB is critical to ensure the participants of the study are protected according to all federal, institutional, and ethical guidelines. Prior to conducting the interview participants were also given a copy of an Information and Consent form detailing the purpose of the research, what I am requesting from them, the potential benefits / risks, and their rights as participants. A copy has been included in Appendix C.

Participant Overview

In total, 14 individuals were interviews for this study representing six different Michigan employers. Employer 1 is a 160 employee pontoon boat manufacturer in mid-Michigan that has been in operation since 1985. The President and owner is a Caucasian male, a college graduate, and started the firm on his own 33 years ago. The Human Resources Manager owner is a Caucasian female, does not hold a degree, and has also been with the firm since its inception. Since that time, she has held a number of different administrative positions and has worked in a human resources capacity for the last 10

years. Lastly, the Controller is a Caucasian male, a college graduate, and has been with the firm for the last four years and has worked in manufacturing for over 15 years.

Employer 2 is a multinational power and mechanical manufacturing company founded over 105 years ago with 96,000 employees with four locations in Michigan. The Human Resources Manager for SE Michigan is a Caucasian female, holds a bachelor's and master's degree and has been with the company for eight years. The Human Resources Manager for SW Michigan identifies as an Asian female who also holds a bachelor's and master's degree and has been with the company for seven years.

Employer 3 is a worldwide and leading supplier and manufacturer of agriculture and construction parts with approximately 90 employees. The firm was founded in 2009 by the President, a Caucasian male who does not have a degree, but has worked over two decades in construction, automotive, and agriculture salvage. The General Manager identifies as a Latina female, who has been with the firm for the past eight years, has taken some college classes but did not complete a degree. The Human Resources Manager is a Caucasian female, holds a bachelor's degree and has held her position for the past three years.

Employer 4 is an ISO-9001 (an international standard that specifies requirements for a quality management system) custom rotary die manufacturing firm. The 55 employee organization has been in existence for over 25 years and offers machine sharpening, heat treatment, rotary design, CNC machining, cryogenic treatment, and carton prototyping. The President / Co-Owner is a Caucasian male, who holds a bachelor's degree in engineering, and has been in his current position for the past 17 years. The Vice President / Co-Owner is a Caucasian female, who holds a degree in

elementary education, and has been in her current position for the past 15 years. The Plant Manager is a Caucasian male, who holds a degree in mechanical engineering and has been in his current position for the past eight years. He has also worked in manufacturing for the past 23 years.

Employer 5 is a single use product manufacturer with 15,000 employees and more than 45 production, distribution, and office locations. The Controller is a Caucasian female, who holds a bachelor's degree and master's degree in accounting and is a Certified Public Accountant (CPA), and has been in her current position for the past five years. She has worked in the field of accounting for the 14 years. The Production / Operations Supervisor is a Caucasian male, does not hold a degree, and has been in his current position for the past 16 years. All of this experience in manufacturing comes from his current employer and prior to this position he worked in construction for four years.

Employer 6 / Association 1 is a mid-Michigan based non-profit manufacturing association that has been in existence since 1936. Perhaps equally pertinent to this study, since 2005, this association has provided U.S. Department of Labor certified registered apprenticeships, short-term certificate programs, and customized skilled-trades training. This is one of two associations in the state to offer such programs outside of traditional postsecondary institutions. Their Executive Director said, "our purpose is to help improve the manufacturing climate in our area and help our members maintain and improve their bottom lines." The Executive Director is a Caucasian male who holds a bachelor's degree, and has been in his current position for the past 15 years. Prior to this position he has over 15 years of experience in associations and publishing.

In total, my participants included seven males and seven females. My participants included Caucasians, an Asian, and a Latina. Organization sizes ranges from a four person association to a 55 person rotary die manufacturer to a 50 employee start-up to two companies that operate who have in excess of 15,000 staff each. Some of the individuals and firms I spoke with have received statewide and national awards for entrepreneurial achievements and success in their individual industries. Several of the participants I met with also serve as influential community members serving on a number of local Boards and in other advising capacities.

Researcher Positionality / Reflexivity

Given the important role of a researcher in a qualitative study it is important to reflect upon my role as a researcher and be sensitive to how my individual biases may potentially shape this research (Rossman & Rallis, 1998). Furthermore, as identified by Jones and Enriques (2009) and Glesne (2015) and it is important to consider the human nature and the relationship of the researcher to the participants. All of the interviews took place on-site at the location of the employer where my participants worked. The meetings between myself and the participants took place either in a conference room at their offices or in the office of the participant. Whenever I was in the office I dressed in professional business attire (dress pants, dress shirt, and a tie) in an attempt to establish myself as a professional in this space. Similar to Jones and Enriques (2009) I perceived my evolving relationship, ongoing communications, and observations of the participants as part of the data generation as it related to the research questions under study.
While the human interactions between myself, the researcher and the participants are important to consider, also identifying my qualities and subjectivity as a researcher is

equally as critical to disclose (Hatt, 2012). My positionality is structured through being a white male growing up in a family where both parents hold advanced degrees and professional positions. I have always believed that postsecondary education of any kind is a valuable asset and through this study, seek to better understand perspectives that are similar and dissimilar to mine . My interest in the value of a degree and workforce readiness arose from my assumption that a degree is always of value and through my belief that my experiences in higher education prepared me for a variety of occupations both within and outside my majors of study. My human resources experience has also influenced my thinking and perceptions because I know they ways in which degrees are perceived by employers is changing. In some cases degrees are an absolute requirement and without one, a candidate will not even be considered for a position. In other cases, previous experience can outweigh the requirement of a degree but is taken on a case by case basis. I have seen situations where degrees are viewed as essential and incredible valued and other situations where degrees may be a hinderance (by employees and employers in terms of expectations for productivity and compensation) which is in part what fostered a personal interest in this topic.

Now, as a researcher, I seek to better understand the lived experiences and perceptions of manufacturing employers to better understand how the value of a degree is perceived by employers, in what ways employers are willing to support employee continuing education, in what ways do employers feel responsible for being successful on the job, and what are employer perceptions of employee barriers to taking advantage of employer supported continuing education. Admittedly, it is my assumption employers do find value in degrees (and other postsecondary credentials) and do feel responsible for

ensuring employees are successful at work. However, I entered these interviews with a somewhat naïve view that employers do not want to support employee education and degree completion because of the cost involved. During my observations and conversations with employers I intentionally created space for my assumptions to be challenged by the participants.

Data Collection

Participants were contacted first by e-mail (example in Appendix D) and if the employer was open to meeting with me, a mutually agreeable time was scheduled to conduct the interview. Once a time was scheduled the information and consent form (Appendix C) was reviewed with each interviewee prior to the interview. At this time, my personal cell phone number was also given in the event that an interview had to be canceled or rescheduled (which unfortunately did occur). The protocol in Appendix A was read to all participants prior to the interview and the interview guide in Appendix B was used to interview each participant. Once participants had agreed to meet with me, I asked to schedule an hour to an hour and a half meeting. Most of the meetings were set up in advance, but some individuals offered to meet with me as I was introduced to them so I took the opportunity to interview them immediately. These interviews provided me with an opportunity to hear directly from manufacturing employers about their beliefs and perceptions regarding credentials, employer supported education, and employee readiness. While some observational data and field notes were collected, the present study exclusively relies on the interview data that was generated and some personnel manuals that were shared upon request. Not all employers utilized personnel manuals and some employers were unable or unwilling to share a copy. Once the interviews were

completed they were then transcribed in a word processing program prior to analysis and coding.

Validity

Consistent with the interpretivist paradigm which has a central purpose of understanding, a select number of validity constructs were utilized here to ensure the data is accurate and representative of the phenomenon under study (Glesne, 2015). Previous research on qualitative research validity with an interpretivist lens encourages researchers to focus on trustworthiness, credibility, confirmability, and authenticity (Creswell & Miller, 2000; Lincoln & Guba, 1985). To account for these validity constructs, searching for disconfirming evidence, triangulation, member checking, and prolonged engagement in the field were each used to ensure data collected and analyzed was accurate and authentic (Creswell & Miller, 2000). As data was gathered, to account for disconfirming evidence observational notes reviewed, and when available, personnel manuals were reviewed data to identify information counter to the trends identified (Miles & Huberman, 1994).

Given the presence and availability of multiple data sources (observational notes, organizational documents, and interview data), convergence (triangulation) was sought among multiple types of information to verify trends which increases the credibility and validity because trends are based on multiple pieces of evidence (Creswell & Miller, 2000). Member checking was also employed as participants were also provided the option of receiving a copy of the audio file after the interview and were invited to edit and review the transcribed interview for validity purposes (Creswell & Miller, 2000; Tracy, 2010). While opportunity was provided to participants to revise what was said, the

actual transcripts which were used for analysis remained the same, but any comments by the interviewees was incorporated to add credibility to the qualitative study. The use of these validity constructs provides further support of the credibility of the account presented here.

Data Analysis and Coding

According to Saldaña (2015), a code in qualitative inquiry is a word or short phrase that "symbolically assigns a summative, salient, essence-capturing, and / or evocative attribute for a portion of language or visual data" (p. 4). For the purposes of qualitative data analysis, a code is a "researcher-generated construct that symbolizes or translates data" (Vogt, Gardner, & Haeffele, 2014, p. 13). This code is then used to attribute interpreted meaning to individual pieces of data for pattern detection, categorization, theory building, and other analytical processes (Saldaña, 2015). As suggested by Saldaña (2015), it is important that the research questions that guided the coding selection process are aligned with the coding method.

The present study is interested in ontological questions related to the value of postsecondary credentials, employer supported employee education, and employer responsibility for employee success. Considering these types of questions are exploratory in nature and rely on personal and interpretive meaning, the coding must reflect this orientation. For this reason, In Vivo or Literal Coding was selected for the first cycle of coding because of the reflective nature related to participants' perceptions, attitudes, and beliefs which represent their worldview (Gable & Wolf, 2012; Saldaña, 2015). Using actual data and terms by the participants themselves was vital to this study because this study seeks to explore individual and in turn, employer perceptions of postsecondary

credentials, employer support employee continuing education, and employer perceived barriers to employer supported credential completion.

In Vivo coding also respects, prioritizes, and honors the voice of the participant, which was equally important to ensure the findings presented here portray an accurate representation of participant perceptions (Glaser & Strauss, 1967). The participant interviews were first coded and codes that were identified in the transcript were placed in quotation marks in the margins and nearly every line of the data was given a code. Not all of the codes were detailed and some codes were applied with just a few words. However, responses that pertained directly to the research questions responses were coded more holistically as to not lose any participant meaning. Once the In Vivo coding was completed, a second read through was conducted to check whether what I grasped was significant by reviewing patterns in responses and ensuring the codes were inspired by the participants' voice, which helped crystallize and condense meanings. This second review was inspired by the work of Charmaz (2014) who used a similar coding pattern and approach.

The data generated with In Vivo coding was used for the second level of coding – theming. The codes generated with In Vivo coding were listed (pasted) in a text editing program into outlined clusters with some semblance of categories. This was done for each participant interview. These categories served as the first list of potential themes. According to Saldaña (2015), a theme is an "extended phrase or sentence that identifies what a unit of data is about and/or what it means" (p. 199). The outlines that were developed for each of the interviews were then compared and similar categories were grouped together to form themes. The initial group of trends was reviewed and evaluated

based on how they contributed to understanding of the phenomenon under study and were then organized into two categories – those that were essential and those that were incidental. This criteria was modeled after the work of Manen (1990), who describes essential themes as themes that if absent, the phenomenon could not be what it is. The In Vivo statements that were generated directly from the participants' own language during the first round of coding served as the basis for these themes. Essential themes were identified that pertained to the research questions under study and are presented in the findings. The themes identified are examples of content that was present during the In Vivo coding and was woven together during later cycles of coding to identify "processes, tensions, explanations, causes, consequences, and/or conclusions" (Rubin & Rubin, 2012, p. 206). These trends are explored next while considering the primary research questions.

Limitations

It is important to acknowledge that my personal qualities and background shaped the questions that were asked, they way in which I approached the data analysis, the implications developed, and the conclusions presented here. While the specifics of my background and approach are detailed in the positionality and reflexivity section, I felt it was also important to mention my background as a limitation here.

My sample selection included participants who were most willing and interested in assisting a doctoral student with his research on manufacturing employers in Michigan which sought to investigate adult continuing education, employer supported education and employer perceptions of employee barrier to postsecondary completion. As a result, this may have created a sample of manufacturing employers who were well educated and had firm opinions on employer supported adult degree completion. Employers who may

have been more self-conscious or reluctant to share their opinions or the innerworkings of their continuing education programs as they may not be very favorable to employees, may have elected not to participate or respond to my requests for participation.

Although discussed briefly in this paper, there are a multitude of social and economic reasons adult students enroll (or not) in postsecondary programs and not all of them are accounted for here. For example individual employee characteristics are entirely unaccounted for and pre-college characteristics are such as one's K12 experience would likely impact adult self-efficacy in addition, factors such as computer proficiency, mental aptitude, familial obligations, institutional commitment, goal commitment, and motivational tendencies also likely play in role in an adults decision to enroll in postsecondary program. Perhaps more importantly, just one perspective is represented here – that of the employer. Employees were not interviewed as part of this study, but would be a natural next step for future research or even a continuation of this study.

Opportunities for Future Research

As stated in the literature review and research design, this study takes a small step forwards towards understanding how employers perceived credentials, in what ways manufacturing employers are willing to support employee continuing education, and better understand how and why adults make decisions regarding the pursuit of postsecondary credentials. There is an opportunity to expand the work done here by examining manufacturing employers in other states and studying how other industries in Michigan approach these same questions. In addition, although this was not the primary goal of this study, there remains an opportunity to better understand how and why adult students acquire new competencies through education and training which they can then

take into the labor market (either at their current or a prospective employer) to gain promotions or advancement. Better understanding the ways in which postsecondary institutions share common goals, needs, and support the work of employers and experienced adults is another area where previous scholarship has suggested there is limitless opportunity to broaden our understanding to create a more transparent system of credentialing and learning that balances organizational and individual needs (Baruch 2006).

FINDINGS

Introduction to Findings

The findings of this study address the three primary research questions (1) what are employer perceptions of postsecondary educational credentials, more specifically how do they view the purpose and value of postsecondary credentials, (2) how do employers support employee continuing education and degree completion and lastly, (3) what are employer insights regarding employee barriers to pursuing employer supported continuing education opportunities. The findings are divided into three sections based on each research question. Implications are reviewed after each finding is introduced as opposed to saving implications for the end of the manuscript. However, the paper will conclude with a discussion and conclusion. Individual findings will be based off the identification of specific themes which help summarize what is going on, explain what is happening, or indicate why something is done in a particular way. In this case, the themes pertain to employer perceptions of credentials, employer support education, and barriers to employees taking advantage of employer supported educational programs. Theming the data helps unify the basis of the participant's experience into a meaningful whole (DeSantis & Ugarriza, 2000). The themes presented here help explain behavior within the organizations and sheds light on the perceptions of workforce readiness and employer supported education.

Credentials are Valued for Specific Positions, but are not Considered Essential

As a reminder, this section is dedicated to the research question of: What do employers think about postsecondary credentials (i.e. their purpose, value, etc.)? Before examining the questions as to how and why manufacturers do or do not support employee

education, it is first important to understand how manufacturing employers perceive credentials. Using the integrative deductive conceptual framework there is some evidence that employers perceptions of credentials are informed by the identified theories of credentialing (i.e. credentialist, filtering, human capital, human resource development, resource based view of the firm, and signaling). In reviewing the data, four themes emerged regarding employer perceptions of postsecondary credentials: (1) credentials are valuable for advanced technical and professional positions, (2) certificates and associate's credentials are valued for the technical skills they teach while postsecondary degrees are valued for functional specific knowledge and higher order cognitive skills, (3) postsecondary degrees are often required for leadership positions, and (4) postsecondary credentials are not essential for the majority of entry and mid-level manufacturing positions now or in the near future.

Credentials Are Valuable for Advanced Technical and Professional Positions

The manufacturing employers interviewed for this study, to my delight, were fairly current on the current credentialing system including certificates. Although few of the employers were familiar with badges or stackable credentials, they were surprisingly knowledgeable about the postsecondary educational system. Employers were careful to articulate their needs for credentials and what purpose they believed credentials filled as it related to their specific business or position needs. While employers did not believe credentials are necessarily indicative of employee quality or performance, there were commonalities among employers about how for example, the purpose of an associate's degree or a bachelor's degree is different. Most employers believed that associate's degrees and certificates bear more responsibilities for teaching technical job skills while

bachelor's degrees focus more on higher order cognitive abilities and the development of soft skills. Often this differentiation came by separating non-exempt technical positions from exempt professional positions. It is this credential hierarchy that manufacturing employers often referenced when discussing the purpose or value of postsecondary credentials.

When employers were asked to describe how employer perceptions of an employee may differ based on completing a certificate, associate's or bachelor's degree, employers were alarmingly consistent. As mentioned previously, most employers grouped certificates and associate's degree capabilities and qualities together and believed those taught employees job specific technical skills. Conversely, when describing the capabilities and qualities expected for those with a bachelor's degree, employers believed this credential taught or certified higher order cognitive capabilities, soft skills, and specific functional knowledge (i.e. accounting, information technology, supply chain, human resources, etc.).

Employer Perceived Value of Certificates and Associate's Degrees

When asked about how expectations or position requirements differ for positions that require a high school diploma or GED versus a certificate, or an associate's degree, or a bachelor's degree, employers were quick to identify and discuss specific positions. One Human Resources Manager at a multi-national plant pointed specifically to the non-destructive test technicians that she employs empathetically stating that "We absolutely 100 percent require a certificate of completion to do that job. That [the non-destructive test technician] is an actual certificate you can get." When probed as to why that certificate was required for that particular position she went on to share, "for that job it's

more complex and challenging than our entry level role and if you don't have the skill to operate the machines then you can't do the work. It takes a lot of skill and know how to do that work." This was a common distinction and in fact, seven of the employers specifically mentioned that certificates certify or signal capabilities to perform a specific technical tasks. Another Human Resources Manager identified another position that requires a certificate is an "X-ray technician. They are not engineers and we don't require a degree in engineering, but the certificate is required and very job specific." Again, this Manager emphasized the value of a credential being specific to a position and being competent to perform particular tasks within that role. When speaking about certificates, one Product Supervisor indicated that, "if somebody has some sort of certificate or badge in SAP or Excel then I'll be much more apt to hire that person that someone who has a general certificate or an associate's or even a bachelor's honestly." Not only did this Production Supervisor indicate that for some positions a certificate can be more valuable than an associate's or a bachelor's degree, but that a certificate is of value for a particular ability or job related skill because of what that communicates to the employer compared to other types of credentials. This also suggests that employers feel comfortable relying on these certificates for talent management purposes because of what they credential communicates to the employer about a candidate's capabilities.

When asked about the role of certificates relative to other credentials, one Plant Manger's comments echoed some of the sentiments reported by other employers when he said,

> A certificate is really that entry level credential. There might be this shop kid or whatever that just does meaningless stuff, but they've got a job and they just go to school to try to get some kind of certification. Once they start working they can see what they need to learn to maybe get that next

> step up. Certifications are a short-term thing that gives them something of substance that's got education. Once they have that certificate it shows they have some skill to do work at the next level.

One Vice President of Operations commented that her company often applies and is awarded a Michigan Skilled Trades Training Fund (STTF) grant sponsored by the Talent Investment Agency based in the Talent and Economic Development Department of Michigan. She notified me that,

> Just this year it's required by the STTF grant that everyone get a certificate at the completion of their training. So we honor that. It's just that they don't want classroom lists of names anymore. That was the first thing they did. They just wanted rosters. People signing in and out of the class. That's not what they want now. Now they want a formal certificate to show that this training is a big deal and that it means something. This award is given to employers to assist in training, developing, and retaining employees. The focus is really on short-term skills and employers are required to show why they need this skill in their proposal.

Although this was the only employer I spoke with who discussed the STTF grant it was telling that this award which is given through the State of Michigan was requiring employees who complete this training to be given a credential that is recognized as a certificate. While this commented that she was "not totally sure what this certificate means, but the employees are generally proud of it and if I see someone with a certificate it tells me that they have some skill and can least do something." While it is doubtful that this credential would qualify as a "high quality certificate" as defined by the Lumina Foundation, considering Michigan does not have a coordinating agency for higher education having a requirement for this grant is at least an indication that Michigan is aware of and concerned about the state of employee credentials in manufacturing. One Executive Director at a local manufacturing association who provides technical training shared the following story about the development of their certificate programming.

> It was about 2003 when the local community college stopped offering skilled trades training. It was very expensive to have the equipment and

> there was decreasing enrollment at the time. The college really needed to invest in new CNC equipment because what they had was so dedicated and at the same time, employers stopped sending staff in for training. Shortly after that 70 employers and educators got together on our watch to identify what was needed and wanted as it related to technical skills training. The educators advocated for a certified manufacturing apprenticeship program and the employers liked being about to have influence on what skills were taught and after years of conversing, it resulted in the development of the only intermediary in the state and one of a few in the country to offer and track manufacturing specific certificates. Out first class started in April of 2005 and we have been working on it ever since. Employers are actually the ones who drive the bus when it comes to classes, skills and certificates, we just take all that and put together the program – which is a lot harder than it sounds.

In this case, a manufacturing association worked in conjunction with their membership to put together an educational program based on the development of manufacturing related skills in the absence of a formal postsecondary program. The first programs that were offered and the programs they continue to offer centralize on manufacturing skills and certificates. Although the employers interviewed for this study all operate in different manufacturing specialties, they shared a common understanding of what it means to have a certificate and what that certificate enables or certifies for the degree holder.

Similarly, when employers were asked about associate's degrees relative to other forms of postsecondary credentials most employers believe that an associate's degree was also job or skill based. One Owner / President said,

> To get that associate's degree it takes more time and personal sacrifice than a certificate, but it teaches you skills. Those skills are still specific, but cover a broad range of tasks. Whether its CNC milling or being a mechanic or entry level debits and credits in accounting it means you have some base knowledge and perform your skill. Most of these jobs don't require a lot of decision making, but you need some know how to perform the major tasks.

Employers were generally aware that an associate's degree takes longer to complete than a certificate, but less time than a bachelor's degree and that a certificate generally focuses on a slightly narrower skill set. In addition, this Owner / President specified that jobs

which require an associate's degree do not require a lot of decision making which could be interpreted as a reference to independent judgement as defined by the Fair Labor Standards Act and appears to be criteria used to distinguish job requirements from one another. This was not the only employer who voiced this sentiment and another Human Resources Manager supported this notion when she noted, "when the job get more complicated like for a tech, something like that requires a bit broader knowledge we require an associate's for that and not just a certificate. It's more valuable for those kind of jobs" thus supporting the belief that associate's degree are for more advanced or complex positions. Separating jobs by degrees based on educational requirements and complexity was something eleven of the interviewees had in common and commented on this directly. Along similar lines, one General Manager communicated that "there's a lot of advantages to having an associate's degree in something likes sales or marketing…It tells me that you know the ins and outs of social media and expense campaigns and different things like that." Based on this response this employer believes that while an associate's degree is still rooted in skill, the capabilities are broader and a bit deeper than a certificate. This was a common sentiment shared across nine of the employers interviewed. Although a number of specific job skills were referenced when discussing associate's degrees such as sales, marketing, CNC milling, machine maintenance, and accounting, employers did share "there are some things you just can't teach" as one Owner / President put it. He went on to say, "if you know how to treat people you can have great customer service skills and not have a degree same goes for sales. If you can sell you can sell – some education ain't gonna change that." Although there was general consensus that an associate's degree or certificate does indicate a certain level of

proficiency, it is not an always an indicator of quality or performance. One Plant Manager recounted, “Am I glad that [employee] has an associate’s in that? Yes. Is there something to be said for having that paper? Yes. But does it mean he’s one of my best? No. He’ll never be that because he’s just not.” Both of these comments are telling because it indicates that postsecondary credentials can train for some skills, but some traits are driven by the individual and are either present or absent regardless of postsecondary training.

While both certificates and associate’s degrees are valued for being rooted in skills, employers did not necessarily find certificates and associate’s degrees to be of value when they are not required for the position. For example, one Hiring Manager expressed some frustration when she reported “those things [certificates and associate’s degrees] improve where one stands in life and where they want to go. I think it really shows that, but only when those credentials are being utilized because without something to transfer that skill to it doesn’t really matter to me if you have that or not.” This comment also supports the notion that the skills supplied by these postsecondary credentials must be directly tied to the job. Some employers even considered certificates and associate’s as equivalent. One business owner said,

> I would put that [an associate’s degree] side by side with a journeyman’s credentials or certificate. Whatever the name is you want to give that because one of our employees just finished the apprenticeship program. We’re waiting that document to come from the federal government. I mean it’s beautiful. We frame them for them, and then present them. Because they can take that anywhere in the country, and it’s honored. Both are things you can take to any company and it tells you something about that employee.

Ultimately, employers do agree that both certificates and associate’s credentials enable, qualify, or train employees to be capable of successfully performing a set or tasks or a

specific skill. When employers were asked to differentiate or share what they believed the value was of a bachelor's degrees in comparison to a certificate or an associate's degree their perceptions were less skill based and instead focused on knowledge domains and higher order cognitive skills. Despite these differences, employers still closely tied perceived capabilities of the credentials with different levels of job responsibilities and requirements. This was even more apparent when employers discussed why certain positions required a bachelor's degree.

Employer Perceived Value of a Bachelor's Degree – Position Specific

Employers were also fairly consistent in their perceptions of bachelor's degrees in comparison with both certificates and associate's degrees. While certificate and associate's degrees were valued for the training that enables an employee to perform a specific skill, bachelor's degree, for specific positions, are valued for enabling an employee to make more demanding decisions and suggesting the holder has a broad and deep knowledge base in a specific functional area. For example, when a Plant Manager was asked about when a bachelor's degree may be valuable that may be different from other educations credentials he revealed, "So it's mostly roles that I would say are professional in nature. Roles that require a little bit more ingenuity in the role and less direction. Most of the professional roles we have require a degree." This comment was not uncommon and indicates that bachelor's degrees signals that there is a difference between employee capabilities and that those who hold a bachelor's degree are capable of making more complex decisions. This perception is exemplified in this comment by one Human Resources Manager who reported,

> Really, a BA is only going to come into play if it's a position that's like HR. In my head, HR, accounting, IT, those require credentials. You have

> to have some type of formalized training to be able to know what you need to know to be successful and actually perform the job. Especially in today's market. In today's world, there's not somebody that can self-educate enough to make me feel this is a good decision for the company and the company's going to be safe having someone in a position like that without a degree. There is just too much risk… There's a lot of areas that you can self-educate and that's okay. Our warehouse lead, he has not had formal training now but he has self-educated and received some certifications for computers and things of that nature. He's not oblivious to that and he's very much initiative focused to learn more and more and more about ERP system that we have. I'm giving him the tools to do that so he can become more seeded but he's worked in the industry and done his position for enough years that I'm totally all right with him not having a bachelor's or an associate's or some type of certification. But again for our technical sales and marketing roles, I think that there's a lot of advantages to having an associate's and at minimum a bachelor's degree preferably. Because again, in marketing knowing social media sales and how to approach and work with diverse customers is really important and there are a lot of things to that….The credential really helps us [as a company] get to the next level. If I'm looking for somebody to do IT internally, that's when we have to have a degree. If I'm looking for somebody to do the finance and accounting, that definitely takes credentials and a BA is what is needed. There's a lot of areas that are so specific to government standards and laws and regulations, and those areas and something like human resources, you have to be on top of it You can learn some of it on the job, but that formal training gives you a leg to stand on and protects us as an organization.

This comment highlights several professional fields including human resources, accounting, information technology, sales, and marketing as positions, based on the knowledge that is required to be successful require degrees. More specially, with those positions this Human Resources Manager finds that such knowledge is best acquired through the completion of a degree as opposed to learning these skills on the job. This Human Resources Manager was not alone in identify this group of positions. Another President / Owner supported this perception when they said,

> Now of course, you get to a certain level of things, like [our Controller], you can't just have anyone in that role. You need a degreed person in that area. If you're looking for an HR or IT person or accounting in general, at a higher level that BA is a must. ...

Similar to the Human Resources Manager, the fields of human resources, accounting, information technology, and purchasing were identified as positions that require the completion of a bachelor's degree. A Controller spoke specially to the accounting function when she noted,

> We're [our organization is] privately held. So it's not something that is from an accounting perspective, cookie cutter. It's not like a bookkeeper can come in and see what we are trying to do and why we do things the way we do. We have a lot of complex transactions, a lot of things that you do not see in your textbook and you do not see in your normal every day run of the mill accounting job, so we need people that are motivated, that are ready to actually go, that are CPAs that are ready and know all of the kind of intricacies of all that different type of stuff. Because accounting isn't something that you can pick up just haphazardly, it's something that you actually ... It's not any sort of intuitive, it's not any sort of just I can get trained on how to understand all the rules, you have to actually go to school to understand it. A degree program provides the rigor and specifies the areas of what you need to know. Without that, you just can't even begin to do the work. And beyond the degree, for some of what we need, it's a CPA that's required which is even a level about that.

Again, here an experience professional specifies what is required and what levels of education are required to perform specific accounting functions. She was also adamant that such knowledge was not able to be acquired through on the job training and was only able to be acquired through the completion of a postsecondary degree program or the completion of a professional exam. While human resources, accounting, information technology, marketing, and purchasing were the functional areas and occupations most often specified by employers as requiring a bachelor's degrees there was one other field that was singled out separately from others.

In addition to the fields previous mentioned, unsurprisingly, degrees were also identified as being critical for engineering positions. Speaking specially to the expectations of job that requires a bachelor's degree in engineering, on Human Resources Manager spoke matter-of-factly when she spoke directly to this issue when she said,

> I would say for an entry level engineering job it's we expect you to know the basics of engineering. Especially for mechanical engineers versus electrical engineers versus industrial or aeronautical engineers and chemical engineers. They are all so different. I don't even know how to articulate it because I work in human resources, but I have to recruit and screen these candidates a lot. There are just those… There are just basic engineering concepts. It's usually pretty black and white. The candidates either know the concept or the process or how to solve the problem or they don't. And it's truly from your education. And it just depends on function, I would say. Like quality for example. There not many degrees specifically in quality. With quality it's a little different because they might not have a degree in quality per say, but they still know how to do it. Quality is one of those things all engineers know a little about. But it might just be basic concepts versus knowing how to build and monitor a quality system. And all of this is different too if it is inside or outside of manufacturing, but education serves as a the base. If you don't have that degree I don't even print your resume or call you. That's how important that degree is for these positions.

Again, based on the requirements and expectation of the position, what an individual can learn through the completion of a postsecondary degree appears to be adequate and somewhat standardized to successful fulfill what is required. Another President / Owner went out of their way to specifically address the importance of education in engineering when they said, "for the ones where a degree is really critical Engineering is the first group that comes to my mind. I mean you can't do even the most basic functions without it and I couldn't even explain to you what I need you to do without it." This comment highlights both the importance of the degrees for this functional area while emphasizing the important role language and vocabulary play in being able to be successful in an Engineering role. Another General Manager spoke to the credential hierarchy when she commented,

> There's really good programs out there, though that I think we see the benefits where you've got these people who are fully capable. And they have other technical schooling or a certification where they're just as qualified as someone with a four year degree. I would say credentials are definitely a screener, but I think we are revisiting what is really needed for what positions. Generally it starts with you know, just experience, but

> moves on to a certificate or associate's degree in something and then a bachelor's degree. I think we're getting a little smarter about it [what we require] that I don't think we necessarily have to say it's a four year degree. But we have to require a four year degree when it can be something that could really benefit the role. Some functions just require it and Engineering is one that does.

While not often made explicit by employers, this statement provides into insight that the landscape of credentials are changing, but there is still a credential hierarchy with a bachelor's degree being the gold standard. Another Human Resources Manager unsurprisingly said, "for our entry level position it's just a high school diploma, but as the job advances we require either a certificate for some jobs or an associate's. But if you want to move up from there, it's a bachelor's degree." Inherent in these comments is the notion that certificates and associate's degrees may be seen as equivalent by some employers. Based on the findings that have been previously reviewed, although certificates and associate's degrees carry similar value in performing a specific skill, as a whole, the credentials themselves may be equally valuable. One Human Resources Manager put it simply, "the degree just helps select the candidate that could be the right person to do it the way you want it done and the way it is supposed to be done. It means they have the training and the know-how." While manufacturing employers generally agreed that credentials were required for a select number of professional positions, there were other reasons or benefits that were identified when discussing bachelor's degrees specifically that did not have anything to do with the knowledge required to actually perform a specific position.

Bachelor's Degree Benefits that are not Tied to Specific Functional Areas

In addition to position specific benefits, employers also valued the development of non-cognitive skills such as commitment, discipline, willpower, thinking power,

independent judgement, and general expertise. When discussing the value of a bachelor's degree specially, one Plant Manager commented, "I don't think education is as much about the topics and what's in there as much as it shows a person's motivation and willpower to complete something. And there's something to be said for that." While other employers emphasized the specific knowledge, this employer found a bachelor's degree signals more about an individual's willpower and motivation than their knowledge. Other employers shared this sentiment and one General Manager reported, "It [a bachelor's degree] means that they put in the hard work for four years to get a degree, so that's a sign that they are a hard worker or at least have some way of getting through college. It shows persistence and dedication." The concept of dedication was also supported by a President / Owner who spoke specially to his belief that a bachelor's degree signal that someone is dedicated.

> Having that degree, specially a bachelors, it all starts with dedication to the task at hand. In the workplace there are always the people that will go to try to help out other people with the tasks on their plate. These are the people I want on my team. The people that do what they need to do, but see the larger picture. As opposed to just standing around and killing time until things get back to them. Again, it's that apparent motivation. And of course, a decent amount of intelligence. They don't have to be brain surgeons by any means. But more often than not, the people that think to do that, the people that want to do that have a BA. Motivation in a lot of cases is more important than superior intellect, for what we need done. From an employer's standpoint, I think a degree definitely creates dedication and initiative to improve their knowledge base, improve where they stand in life and where they want to go. I think that it really shows that.

Based on his own observations, this employer notices a different in how an employee actually performs in the workplace who holds a bachelor's degree compared with someone who does not. Another President / Owner focused on a more generable trait.

> A bachelor's it means that you are teachable. Yea, you may know something or have deep knowledge in something, but it means you are

> teachable. It means you can understand what the expectations are for something and then find a way, on your own, to meet them. In school you are evaluated based on criteria and the fact that you made it through, means you know how to do that.

In addition to being able to perform a position, to this employer what a degree signals is an ability to follow instructions and be adaptable. When discussing the bachelor's degree specially, manufacturing employers were more apt to identify specific soft skills when reviewing what they identified as some of the benefits or value of a bachelor's degree in a broad sense.

Another Vice President of Operations who once worked as an elementary school teacher and holds a degree in elementary education spoke specifically to the discipline and thinking power that the completion of a bachelor's signals to her about the holder's capabilities.

> I guess I've just seen too many examples of people's performance with and without education. From my perspective, it just and this may be a little esoteric here, but people who have experienced formal postsecondary education, people like that develop a sense of discipline. Not only in their behaviors, for example, learning that it's important to show up on time for class. If there's an assignment, it's important to turn that assignment in on time. If you want a better grade, that probably means you need to spend a little bit more time versus a little bit less You know, that kind of discipline comes from being in that environment. Where that is the expectation. But it also, I think, creates discipline in how people process things. How they think about things. You know, there's a sense of organization that's developed in their brains that allows them to be able to sit down and put together a thoughtful statement. That's thinking power, and that comes from being required to do that. And after having gone through that process, a BA shows that you were able to do that successfully, time and time again with multiple courses and instructors. I guess there's some people that wouldn't have to ever go one day in their lives to school and they could do that, but that would be one in a billion.

This employer shared her perceptions regarding the benefits and requirements certain positions have as it related to education. She specifies that another benefit of completing a bachelor's degree is that it teaches students how to be disciplined, complete

assignments on time, and process information. Also implied here is that learning such skills or possessing such traits is not something that one can necessarily learn on their own, it comes from being in structured environment. She went on to describe specific examples in her workplace when she comment on specific employees at her organization.

> Then we have [our Sales Manager]. He was just completing a performance review for someone. He didn't to even really know how to think about doing it, because our performance reviews aren't just checklists. There's a place to write comments and our employees expect that and as an Executive Team, our employees deserve the feedback. He doesn't necessarily see how people do what they do, or how what an employee does ties to the criteria that are being used for evaluation. So he needs a lot of assistance. Now, he listens. You know he's a great student, but it's just not disciplined in writing a complete thought. His thoughts are sometimes disjointed. We have employees here who are just started their careers who have a degree and can write better than [our Sales Manager] who has been here for over 20 years. That's not a generational thing, that's education. But in terms of being committed, and having a giving spirit in the organization and not always putting himself first but putting our employees first, he represents the core values of [our organization]. However, when it comes time to replace him, I know we are going to require a degree.

Speaking directly from experience, this Vice President of Operations was able to tie specific higher order cognitive abilities such as an ability to write and reason and to do so in a coherent and organized way. This point is also salient because it identifies another important trend identified through these interviews – degrees are especially important for positions that have supervisory or leadership responsibilities.

Degrees are Often Required for Leadership Positions

While supervisory positions were not the primary focus of the present study, employers commonly brought up the importance of degrees for positions that have leadership responsibilities and hiring and firing authority. When discussing the value of degrees, while employers often separate value based on the type of degree, and type of position, employers also often require degrees for leadership positions. One Human

Resources Manager separated supervisory and non-supervisory positions by calling those without supervisory responsibilities to be "individual contributors." This was not language that I was familiar with and when asked about the difference in more detail, she clarified her comment and said,

> For roles that are not going to be leadership, they are going to be individual contributors, but we really need the technical aptitude. And only the technical aptitude that is specific to the role. But if you are in a leadership position we require a four year degree. It does not matter so much as to what the degree is in or where it is from, but you have to have it. And if you supervise you absolutely have to have it.

As it turns out, this is not necessarily an uncommon requirement and this was a requirement shared by seven of the interviewees. One President / Owner was fairly blunt when discussing this requirement reflecting back on a recent conversation with a staff member and comparing their organization to other bigger firms.

> Obviously, that's a bigger company and I don't know much about the bigger ones, but I'm not lyin', you can't get very far with what you have. A high school diploma just isn't going to cut it to lead around here. We don't care that you have 30 years of sales experience, if you don't have a degree, I don't even look at you for a leadership role.

According to this President / Owner, this appears to be a very hard and fast rule. Another Human Resources Manager reported, "For production supervisor's on up and though the management team we require degrees. If you supervise we require it." When asked why this was a requirement for leadership positions, she said,

> While I'm not sure when it was instituted, but it has been here since I've been here which is almost 10 years. I think it just shows… Well, with a degree it means that they have some kind of knowledge of being able to do read books, learn things, or lead people, or manage people, or at least some background versus just having experience in one or two places where they might not even be doing things right. Just that they've been exposed to other ideas and other ways of doing things I think is really important, especially for supervisors.

While it is interesting that all of the employers included in this study with the exception of two require degrees for their supervisory positions, it is equally interesting that this

Human Resources Manager was not entirely clear on why they were required. Other employers also specified that degrees were required and when a General Manager commented the reason being she said it was because,

> It's more of that leadership team level or top tier thing. If you are seen as a leader of any type in our organization we would require having a bachelor's degree or more. It shows that we have high expectations and that we want employees who have broad knowledge leading our company forward. I know not everyone agrees with this, but it's a management decision. Even though we don't have a lot of employees at this level, we need leaders who can solve complex problems and are involved in a lot of situations that are sometimes not directly related to their job. Knowing a little about a lot of things helps in those circumstances.

In this case, this Manager believes having a degree is in part an indicator of status, knowledge, and ability to analyze complex problems. Others also identified status and knowledge as to why a degree was required for supervisory positions. One Controller said, "For example, in my department, if you supervise you need a degree and a CPA. If you don't have those things plus experience you have no business supervising other accountants. It's a knowledge and respect thing." Again, in this instance the education is considered a requirement based on the job, but also because it advises other junior staff and the supervisor needs to be capable of providing leadership in that functional area.

The discussion of training relative to leadership positions came up naturally in the conversation with the Executive Director of a local manufacturing association and he shared that this was a fairly common practice among manufacturing employers when he said,

> You know, we've been offering some form of supervisory training for a long time. But now with HR in their trying to oversee and manage everything larger organizations have started to require degrees. HR is the one who started to require that. While we still offer some supervisor training, it is more about the degree now. HR and employers use it as a screener. That degree justifies opening the door because it is believed that they can perform at a high level or know more things having done that.

> Nowadays almost all our members require degrees for upper level management. Before, members would send their staff to us for supervisor training to either a) fix the employees, which usually didn't work or b) train an employee for advancement. Now a lot of that goes through associates and bachelor's degree programs. Just a sign of the times I guess. I see it as more of a philosophical issue – employers want employees to have that paper so that they can grow and consider themselves a progressive company. But I have other members who are just out there grinding and don't care as long as they can get the job done. But for the most part, leadership jobs required a degree.

Having worked in Michigan with hundreds of manufacturing employers, this Executive Director was able to speak to how times have changed and while supervisory training is still valued, it appears to have been replaced by requiring a degree instead. He also alluded to the notion that human resources, perhaps in an attempt to professionalize the function, have started to require degrees to confirm the presence of leadership skills or training. This comment was validating because it supports many of the comments presented here by the group of manufacturing employers interviewed.

Although nearly all the employers included require a degree for supervisory positions, the one organization that does not, does require some additional training. Their Controller who has experience at both large and small firms provided some clarification about the requirement and speculated this was in part based on organization size when he expressed some dissatisfaction with a four-year degree being required at another employer,

> Yeah, there's definitely an issue with it. And, people who can't grow, other companies do – with or without a degree. So, a lot of smaller companies don't require the degrees that [my former employer did], so people will go to a smaller company like us. I had a staff member back then and he brought all these facts to me about all these companies who don't require degree. I'm like, "Listen, it's [our] policy, it's not something I can just go in and change." But here, we don't require a degree, but you need to go to a how to be a supervisor class or a leadership seminar at one of the local manufacturing associations.

When asked further about what skills he hopes staff members learn from the training he responded and said, “Just how to lead people. Keep a cool head. Know how and when to discipline staff and just be a resource. Getting some exposure to different ideas helps too. In reality, I am not sure all those things can be taught, but it has helped some of our supervisors.” Even in the case of this employer that does not require a four-year degree to supervise, they do require staff to have similar competencies. When I spoke with the President / Owner of this firm about this same topic he revealed,

> We have, again, particularly in the assembly area right now, we have a supervisor who is trying to supervise 48 people without enough strong leadership in the smaller groups. We do have some people there, but most of them are people that have been with us for longer term. We desperately want people who are willing to step up. And yeah I’d love to require a degree, I think that would really help us, but I just can’t get them to stay with the market the way it is and I don’t think we need it. Right now it’s, show [us your] work ethic. Show the curiosity. Show the commitment to quality. And then we can get you some training and see how it goes. It’s far from an exact science, but we do our best.

While a four-year degree is not required, it does seem that it would be preferred and that this employer believes having a four-year degree would benefit staff. Even though a degree is not required, he does require his staff to build leadership skills though the local manufacturing association’s leadership classes. While this was an unexpected finding, this group of manufacturing employers was clear about their views of educational credentials and under what circumstances they found them valuable. The bounds that were outlined here were intentionally well-defined because the next finding highlights that manufacturing employer believe for most positions, postsecondary credentials are not valuable or required. However, before reviewing this finding in detail, the implications of the present finding will be discussed.

Employer Perceptions of Credentials – Implications

As a reminder, the findings in this section covered under how employers see degrees being valuable. Employers shared that they believed certificates and associates degrees were valuable for teaching specific skills, while bachelor's degrees were valuable for professional positions that required a broad and specific knowledge base. Employers also believe bachelor's degree taught degree holders how to be dedicated and disciplined. Lastly, most employers required a four-year degree for positions that supervise in part due to supervisors needing to mentor staff, but also because they believed a four-year degree enabled staff to handle more complex situations and positions. These findings are pertinent and timely because both Cappelli (2012) and Hora (2016) argue that little research has actually investigated why employers require postsecondary credentials for specific positions and that traditional academic and educational research has been entirely absent from this debate. Within the manufacturing industry in Michigan, this study yields some information regarding why employers require degrees for certain positions and why they find them valuable.

The Lumina Foundation who is a leading advocate of the national "completion agenda," has centered its efforts in higher education. For the past few years they have been the driving force behind achieving Goal 2025 which calls for 60 percent of Americans holding a degree, a certificate or other high quality postsecondary credential by that year (Merisotis, 2016). Recognition of certificates in this figure pertaining to college completion is a recent phenomenon, championed by Lumina as a result of the growing labor market value of this credential. The present study does support the value of both certificates and associates specifically as it relates to employee skill development

and demonstration of technical proficiency as verified by employers. One recent study by Falcone (2016) examines the growth in certificate programs from 1980 to 2013 and argues that, "the most ideal certificates will teach very applied, useful, and cutting edge knowledge, training, and skills that are highly valued in the workplace" (p. 69). The present study confirms this finding based on the ways in which employers found certificate and associates degrees valuable for teaching job specific or technical skills.

Employers were surprisingly well-informed regarding what a certificate is and how that differs from an associate's or bachelor's degree. While some have argued employers do not value certificates because the skills taught either do not actually reflect the competencies required for a position or are simply out of date, the present research does not reflect these concerns (Bessen, 2014; Lafer, 2002). In fact, some employers revealed that they pay for employee certificate training because of how valuable it is for specific positions. This would also support signaling theory principles which suggests that educational credentials signal potential skills to employers that can be used in hiring decisions. Based on these interviews, it does appear employers use educational credentials as signals for positions that require specific skills or abilities that employers believe can be acquired through a postsecondary program. Some employers interviewed even said that directly. From a labor market perspective, the Georgetown Center on Education and the Workforce has authored a number of papers on this topic from a national standpoint. Once such piece focused exclusively on certificates (Carnevale, Stephen, Hanson, 2012) and makes two key assertations: (1) certificate holders earn 20 percent more than high school graduates and (2) the need for certificates is growing. The present study does confirm, though without specificity, that certificate holders do earn

more than those with a high school diploma and are valued for a select number of positions. Although this study does not have data to confirm the need for certificate is growing, one Executive Director of a manufacturing association even commented, "manufacturing employers are starting to realize the some type of certificate or credential is really going to be required even for entry level positions going forward." This study also suggests that employer perceptions of certificates and two-year degrees may be more similar than dissimilar with both emphasizing skill development. While other reports in the State of Michigan have also suggested the need for certificates is growing, employers were cautious if not outright hesitant to specify what their future needs are (The Workforce Alliance, 2009). The next findings section will discuss at length why employers do not value postsecondary credentials for most positions.

However, the findings here do support a role for certificates now and into the future. While only about 4 percent of Michigan adults hold a certificate (Austin, 2015), there are opportunities in manufacturing for immediate employment in areas like non-destructive testing and manufacturing quality for those who hold certificates in those areas. Although the labor market is strong now, in times of economic constraint, several authors have noted that enrollment in certificate programs is especially lucrative for educational institutions during times of economic distress (Chang & Yuan, 2014; Gold & Jose, 2011). While the employers in the present study were generally knowledgeable about what certificates were, their depth of knowledge regarding specific programs was quite limited. This was verified by a Manufacturing Executive Director who leads the only association in the state which offers high quality certificates when he reported,

> Our biggest hurdle initially was getting employers to understand that certificates are education. A lot of what they needed was included in

> programs and classes they weren't familiar with. But just starting that conversation allowed us to showcase the value of the program and at the same time, their feedback enabled us to change some of the programming to better reflect their needs.

Another employer involved in the Michigan Skilled Trades Training Fund (STTF) recounted that the program now requires a certificate of completion which creates some confusion on who is allowed to furnish certificates and what that actually means. Going forward, it seems like there is a tremendous opportunity for both private sector trainings and postsecondary institutions and their faculty to get more involved in standardizing what a certificate means. In addition, past research has shown employers are more likely to get involved in certificate programs when academic institutions promote and market the skills taught in their certificate problems (Patterson, 2002; Taylor, 1999). While only a select number of employers were interviewed here, most were unaware of the scope or depth of certificate programs offered. From a non-credentialed employee standpoint, certificates at least in manufacturing, appear to have a high return on investment relative to their cost and the time required to complete them. For this reason, it is understandable why multiple reports from the Lumina Foundation and other continue to emphasize the important of certificates for adults who have never enrolled in a postsecondary program or have some college and no degree.

Employers were also clear on the ways they viewed the value of certificates and associate's degrees as separate from a four-year degree. Some of differences emphasized focused on specific knowledge bases for professional positions such as engineering, human resources, purchasing, or information technology. This would support previous research on employer perceptions of credentials which shows that returns on investment are not equal across all majors and fields of study. In one such study the researchers

examined unemployment for recently college graduates and found that unemployment rates were generally high for non-technical majors such as the Arts, Humanities, and Social Sciences while those who majored in Healthcare, Business, and Professional Services had the lowest levels of unemployment (Carnevale, Cheah, & Strohl, 2013). The interviews conducted here with manufacturing employers extend these findings as employers exclusively valued technical skills sets such as those associated with accounting, human resources, and supply chain majors. Reconnecting these findings back to the framework, for positions that require degrees in technical fields, it would be fair to say that filtering and signaling theory principles do hold here. Similar to the way employers perceived certificates and associate's degrees in terms of skill, employers do believe the completion of specific four-year postsecondary technical programs (i.e. accounting, human resources, information technology) does serve as both a signal and a way for employers to sort credentials on perceived knowledge, skills and abilities. As much as employers valued specified degrees for what knowledge or abilities they believe an individual had as a result of completing a degree in that field, they also believe that without that degree an individual could not perform the same tasks required. Although this was not the primary purpose of this study, it is worthy of noting that none of the employers interviewed for this study made a distinction between credentials acquired through a traditional in-person format versus a predominately online program. Previous research suggests employers tend to openly view credentials from pro-profit and online universities less favorably (Deming, Yuchtman, Abulafi, Golding, & Katz, 2016; Deterding & Pedulla, 2016). In general, employers thought favorable of bachelor's degree holders in terms of the knowledge, skills, and abilities perceived by employers as

long as their degree was in a technical (or non-social science) field. Employers also valued a number of soft skills that were specific to bachelor's degree holders.

Despite the overwhelming presence of labor market resources claiming there is a skill shortage of well-qualified technical and professional staff, there is a growing body of research focusing on the shortage of soft skills. Recent reports have moved on from using the term "soft skills" to using "21st century skills" to describe similar attributes. An example of 21st century skills include critical thinking, oral and written communication, teamwork, creativity, lifelong learning, professionalism, and social responsibility (Casner-Lotto & Barrington, 2006). In *Beyond the Skills Gap*, Hora met with 77 educators at two and four year colleges and universities and 75 human resource managers and directors to understand their experiences with the labor market, understand what types of skills they value, and identify what training employers provide. Among other findings, Hora (2016) found although employers did not question the ability of postsecondary education to prepare students technically, employers were concerned about the educational system's ability to cultivate the broad-based liberal arts skills that are needed to succeed in today's global economy. The findings of the present study also mirror (or at minimum do not refute) this finding and found that for positions that do require some form of postsecondary training, those with the required credentials performed satisfactorily. This conclusion is also supported by other research that reports that over 96 percent of all occupations rank ability to think critically as either "very important" or "extremely important" to their jobs, which underscores the fact that 21st century competencies are often overlooked in discussions about employer needs and the skills gap in general (Carnevale, Smith, & Strohl, 2013). In the present study

manufacturing employers were quick to acknowledge the importance and presence of a number of 21st century skills they believe derived from the completion of a bachelor's degree including discipline, written communication, ability to dissect complex problems, and even lead or supervise. While manufacturing employers clearly value technical competencies, they also value soft skills that come along with the completion of a degree.

While there were a number of educational and postsecondary implications there is also one human resources related implication related to the classification of positions according to the Fair Labor Standards Act. I would first like to orient readers to the difference between exempt and non-exempt positions according to the Fair Labor Standards Act (FLSA). According to Section 13(a)(1) of the FLSA 1938 which was amended in 2011 (FLSA, 2011), employees are exempt from both the minimum wage and overtime pay for employees who are employed in a bona fide Executive, Administrative, Professional, or Outside Sales capacity. In order to determine the exemption status of a job the position is evaluated against three criteria. The first is Salary Level – is the employee compensated on a salary basis at a rate greater than $455 per week **and** are they paid full salary for any week in which they perform any work? The second is Job Duties – is the employee's primary duty the performance of office or non-manual work directly related to the management or general business operations of the employer or the employer's customer? The final criteria is Discretion and Independent Judgement – Does the employee's primary duty include the exercise of discretion and independent judgment with respect to matters of significance? Each position must pass all three areas in order to be considered exempt from overtime

regulations. Employees that are classified as exempt are not paid overtime for time worked in excess of 40 hours per week.

While this is the general outline of how positions are classified, the intricacies surrounding the job duties test and the discretion and independent judgement tests are important to review. When examining positions to determine if they pass the Job Duties test it is important to understand what constitutes work related to the management or general business operations of the employer or the employer's customers. According to the Department of Labor, work "directly related to management or general business operations includes, but is not limited to work in the following functional areas: tax, finance, accounting, budgeting, auditing, insurance, quality control, purchasing, procurement, advertising, marketing, research, safety and health, human resources, employee benefits, labor relations, public and government relations, legal and regulatory compliance and computer network, internet and database administration" (United States Wage and Hour Divisions, 2018). Furthermore, the Department of Labor classifies "Employer's Customers" as employees who act as an advisor or consultant to their employer's clients or customers such as a tax expert or financial consultant (United States Wage and Hour Divisions, 2018). As I will discuss shortly, many of the work that was previously identified by the Department of Labor that counts towards an employee being exempt are done within jobs that typically require a bachelor's degree. Next, I will review the Discretion and Independent Judgement test in more detail.

Again, according to the Department of Labor, to determine if a position passes the Discretion and Independent Judgement test one has to conclude the incumbent is responsible for exercising discretion and independent judgment with respect to matters of

significance (United States Wage and Hour Divisions, 2018). According to the Department of Labor, discretion and independent judgment includes, but is not limited to the following: (1) whether the employee has authority to formulate, affect, interpret, or implement management policies or operating practices, (2) whether the employee has authority to commit the employer in matters that have significant financial impact, (3) whether the employee performs work that affects business operations to a substantial degree, even if the employee's assignments are related to operation of a particular segment of the business, (4) whether the employee has authority to waive or deviate from established policies and procedures without prior approval, (5) whether the employee has authority to negotiate and bind the company on significant matters, and (6) whether the employee provides consultation or expert advice to management (FLSA, 2011). In addition, it is important to note the Department of Labor specifies that discretion and independent judgment does not include: applying well-established techniques, procedures or specific standards described in manuals or other sources, clerical or secretarial work, recording or tabulating data, and performing mechanical repetitive, recurrent or routine work. While the Department of Labor does not specify which of these duties or responsibilities require a postsecondary credential in order to perform, there is evidence among the manufacturing employers that they do classify positions in part, based on the postsecondary education requirements.

The FLSA information is especially pertinent here because employers were specific about which positions they required a degree. For the most part, nearly all positions pass the salary test of being paid $455 / week. Where most positions fail to qualify for exemption status is based on their Duties and Discretion and Independent

Judgement tests. Based on input from employers, they often required degrees for positions in the following functional areas human resources, accounting, information technology, marketing, engineering, quality, and purchasing. What is notable here is what employers did not say. Employers did not say they valued degrees in, for example, interdisciplinary studies, psychology, or communications. They were very consistent and specific. Going back to department of labor specifications, to qualify for exemption status some of the duties include: tax, finance, accounting, budgeting, auditing, quality control, purchasing, procurement, advertising, marketing, research, safety and health, human resources, employee benefits, labor relations, public and government relations, legal and regulatory compliance and computer network, internet and database administration (United States Wage and Hour Divisions, 2018). Interestingly, the positions that manufacturing employers identified as requiring a bachelor's degrees are included on this list. This would suggest that for some positions, in particular the functions identified by the FLSA to pass to duties test do require a degree. Secondly, some of the benefits employers valued that were not tied to a specific functional area included complex thinking, discipline, and general expertise. When examining the FLSA definition of discretion and independent judgement some of the functions or abilities specified here include characteristics employers value about those with a bachelor's degree. For example, the FLSA specifies being able to interpret or implement management practices and being, handling ambiguous situations that may deviate from practice and providing expert advice to management as all qualifies that would make a position exempt. While far from conclusive, the findings here indicate that employers do value different qualities in part based on degree for exempt and non-exempt positions. This would also support a

generally accepted hierarchy of academic credentials with a bachelor's degree being viewed as more prestigious than a certificate or associates degree. Going forward, considering degrees in determining exemptions status may help reduce the number of misclassified employers which continues to plague the employment landscape (LeRoy, 2018).

A somewhat surprising outcome of this study is the overwhelming support employers had for requiring a four-year postsecondary degree for positions that have supervisory or leadership responsibilities. In some ways, this finding is supported by the previously discussed findings regarding why employers value bachelor's degrees – manufacturing employers find the technical and soft skills to be invaluable. One such study conducted by Bontis and Serenko (2007) showed that postsecondary credentials are a moderating factor when employer are evaluating employee credentials and perceived employee capabilities. Other studies examining the role of postsecondary education and career progression indicate that upward mobility time is reduced and that advanced educational credentials are positively correlated with promotion into supervisory positions (Arik & Dunne, 2014; Polk, & Armstrong, 2001). This finding does provide some support for the credentialist theory. As outlined in the findings section while employers generally required a four-year degree for supervisory positions, not all employers were sure why it was a requirement. This could indicate that employers are using four-years degrees to restrict the pool of qualified applicants to just the social elite who hold a degree. However, some employers did specify that the purpose of the credentials is to denote technical expertise as opposed to serving an exclusionary purpose. In general, employers tended to believe that additional education would enhance

the ability of the individual to handle complex problems and also enable them to work better in a collaborative environment. Research on leadership teams indicates that leadership roles are only becoming more complex and it would seem like a logical step for employers to start requiring advanced educational credentials for these positions (Bennis & Thomas, 2002). Although employers were clear about their perceptions of certificates, associates, and bachelor's credentials and had clear expectations for positions that required postsecondary degrees, in general, manufacturing employers reported they did not find these credentials essential for most positions which will be review in more detail in the next finding.

Formal Postsecondary Credentials Are Not Essential For Most Positions

While the important and historical debate over higher education as a public or private good continues to put higher education in a precarious position, this study sheds some light on the function of higher education in terms of the role credentials play in the dynamic and changing labor market with a focus on Michigan manufacturing. A recent survey conducted by the McGraw-Hill (2016) on workforce readiness found that just 21 percent of graduates felt prepared to join the workforce. This mirrors other findings by the Association of American Colleges and Universities (AACU) which surveyed over 400 private and non-profit organizations and less than two in five employers believe college graduates were well prepared for work (Hart Research Associates, 2015). Meanwhile, previous labor market research suggests that middle skill (jobs that require more than a high school diploma, but less than a four-year degree) positions make up about 49 percent of Michigan's positions and represent the largest share of future openings (Achieve, 2012; The Workforce Alliance, 2009). Based on this information, the

State of Michigan finds itself in a predicament with graduates not feeling prepared for the working world while labor market projections suggest the demand for educated workers is set to increase to unprecedented levels.

Despite this research, employers interviewed for the present study revealed that 80-95 percent of current positions do require any postsecondary education. Based on their business needs, manufacturing employers professed they do not value postsecondary credentials as highly as perhaps, other industries. For example, when asked about how important or valuable they perceived credentials relative to their entry and mid-level openings, one Human Resources Manager revealed,

> In the past, we just haven't found degrees that fruitful in terms of what we had to pay to get them. Up until recently, we had no problem finding the people we needed. And again, most of those people don't need secondary education. I hate to say it, but most of them don't even need a high school diploma. Wow. In reality, only like 10 percent of our jobs require any degree or certificate or anything really. If that much. It is surprising.

While it is not uncommon for entry level positions in any industry to not require any formal education, it is startling that the employers in this study claimed only between 5-20 percent of positions at their firm required any form of formal training or postsecondary education. This was another area where the five manufacturing employers and interviewees were incredibly consistent in their responses and views. Although there were some exceptions which have already been discussed, in general, manufacturing employers viewed postsecondary credentials as not essential for most positions now and into the near future.

Although previous labor market research indicates credentials are becoming more in demand in for manufacturers, the research here does not support this notion. When employers were asked about positions that were especially challenging for them to fill,

nearly all the employers pointed to entry level "on the floor" positions. When asked what was required for an entry level position, one Owner proclaimed,

> So, although I very highly respect education, it's for a lot of the things we do, it's not necessary. And I hate to make it sound like [our] industry is the third world or something. The worst thing you can do in this industry is bring in somebody that who was highly educated because they expect things to work in a logical manner. They just don't in this industry. It's a very much seat of your pants industry still. Virtually nothing for a lot of our openings is actually required in terms of a degree. If a person's willing to work, we will train them. But there just aren't people out there looking for work at this point. We do have things, say welding or our parts department jobs, which take a little more skill, but for the most part that education just isn't necessary.

The lack of a formal postsecondary educational requirement for most positions was the case for all five of the employers included in this study. When this Owner was probed further asking if a technical certificate or associate's degree would benefit his staff he said,

> For example, our best assemblers and welders do not have a college degree. But they worked for the competing manufacturer for 10 and 12 years before we hired them. And we won't find anyone better. John, our head of quality, same thing. Worked for the same competitor. Grew up, his father was actually one of their supervisors in charge of their trucking. And grew up over at a [competitor], and he just has a knack for quality. He just has a real eye for it. He's high school. I do not want to say education isn't important, we just don't need it for a lot of our jobs here. What is important, is boots on the ground experience for those roles, that's what's valuable

This Owner's comments proved to not to be uncommon as all five of the employers included in this study shared similar sentiments. Another President and Owner of a small manufacturing firm when asked a similar question said,

> Well, the problem with post education for our positions is that I just don't think they generally have the right classes … that would actually help [our firm]. And that's the same thing when people go with post education, generally the post education probably doesn't apply to [our firm] as a whole. It might help on the leadership team when we're looking for a particular skill set, but we don't turn those over very often. But for the majority of our jobs a degree is not critical.

While the manufacturing employers here reported education was not critical for a number of their positions, to better understand what employers were looking for they were asked about what is important when reviewing credentials or conducting interviews with potential staff for most of their openings that do not require a degree. Given the multitude of factors employers consider when evaluating credentials (resume and / or cover letter), employers were asked to identify the most important factors they consider when evaluating the credentials of a potential employee. When discussing the role of education relative to their positions (or openings), experience was identified as being more valuable for a majority of their openings than having a postsecondary credential of any kind.

To better understand the value of educational credentials, employers were asked how they evaluated credentials for the positions that were most prevalent at their facility (i.e. what unique job or classification contained the largest number of employees) and for the positions that they themselves supervised. One Production Superior for a plant articulated his process for evaluating credentials.

> When I'm looking at a stack of resumes or sitting down in an interview with somebody for one of my openings the main plus that I'm looking for is just- personality, mostly. Or I'll ... I don't know if you do this or not, but the whole personality thing, if you can't get along with people, if you're very standoffish and what not, you're not going to work because of that... I could care really less if somebody went to Michigan or went to Michigan State to get a four-year degree and came in. I don't care. If you can do the job, are personable, and you're there then you're fine. When I see you working I can know that day whether you will stay here beyond that first week.

When the Production Supervisor was sharing how he reviewed credentials he appears to focus on two factors, both of which are observable – how personable (or likeable) the candidate is and whether or not the person can perform the function of the job through a visual inspection. This emphasis on *observable traits* when considering an employee for

a position is not a recent phenomena as previous work by Arkes (1999) suggests employers rely on both observable and unobservable for positions that do require a degree and rely more on observable traits for positions that do not require a degree. Another employer reported they evaluate the capabilities of potential employees by having them perform a work-related task. Another Owner / President said,

> In the shipping department, we've done a speed test. How fast can you find and put these parts in these boxes. It seems like a simple thing, but I if it takes you X amount of time whether or not you are fast enough. This wasn't something that I necessarily came up with. One of the best things I learned when I was at [another manufacturing firm] was at orientation. We had to take this box of bushings and then transfer it to this empty box and [the hiring managers] were just watching us do it. Well, I reach in and grab 10 bushing bolts with 10 fingers. You've got somebody else who's taking one at a time, and getting it nice, but that's not the fastest way. It's just one of those things where you do it one way or you don't.

This example really illustrates how one employer uses and why they value an observable screening process to evaluate candidates for one set of their openings. Looking more broadly at how employers evaluate credentials for a majority of their positions employers tend to lean more heavily on the role of experience as opposed to the value of a postsecondary credential for the majority of their openings which do not require postsecondary education.

When employers were explicitly asked which is more essential for the majority of their positions employers almost unanimously lauded experience over education. When one Plant Manager was asked why this was the case he commented,

> If anything, just a person that's had responsibility, active responsibility, meaning physicality of a job. We stand all day, this isn't a desk job, so these individuals that have worked, maybe they work on their own car or they've done carpentry or they done roofing, any of that stuff, you've got me interested because I know you've worked. And quite often it's more back breaking and more difficult than what I'm offering so I think I can get you to appreciate that. As far as degrees, again I'm not one to be real high on the impact of actual formal education for these types of roles. I

> think the exposure is great because… it's nice to have exposure to ideas around safety and quality and lean manufacturing, but that's not really required.

In this example, there is an underlying sense that individuals with a degree (and limited experience) might not have learned to be a hard worker or have handled significant responsibility. This also supports the notion that employers value a clear, linear, and observable connection between what someone has done in the past in terms of work relative to what the present opportunity offers. In addition, this may also suggest employers are not entirely clear on what or how a degree might contribute to someone being successful for a non-professional (non-exempt) position. It appears that experience is also preferred because it is considered less of a risk than someone who has not worked but has a postsecondary credential of some type. This Plant Manager was not alone in this perception as this was echoed by four of the five employers included in this study. One Co-Owner of a small manufacturing plant also reported,

> Yeah, experience can trump, I hate to use that expression, but experience can trump education. As long as there's a high school diploma or the equivalent, but with experience I know that someone has the capacity to get the work done. If they don't have that, then there's a problem

When she was probed further and asked why she thought experience can be more valuable than a postsecondary credential she unsurprisingly said,

> First of all, they're already trained to a degree. And if they've shown themselves to be highly proficient in what they've already done, I don't have to take the chance that they're one of the kids that we hear partying every night on weekends in East Lansing out our window. They've already proven themselves in the marketplace.

Again, there appears to be a clear distinction in the mind of manufacturing employers of what it means to have a postsecondary credential compared with what it means to have previous work experience and it comes down to the level of risk. Education seems to be more ambiguous in what it may offer whereas with experience, it is seen as more

objective and skill-based which is more transparent. Some employers even revealed they screen candidates out for some positions simply because they have a postsecondary degree.

The employers who were explicate in sharing why they would remove someone for consideration for a position tended to do so for entry level positions. One reason being is because if someone is applying for a position where they appear to be "overqualified" there must be something "wrong" with them. For example, Human Resources Manager revealed,

> If they are applying for an entry level position and … have anything above an associate's degree, even actually right now, at the entry level, you'd question why they'd even be putting in an application for one of the entry level jobs, if they even have an associate's degree. Because there's so much demand out there. I mean, there are jobs everywhere. And if a person with an associate's degree can't find a better spot to start than assembling boats in our production line, there is something else in play. Maybe they can't show up to work regularly, have a background issue, or some other maladaptive trait. I know that sounds bad, but it proven true time and time again.

While this bias may seem to be situationally based, six of the thirteen people interviewed made comments about how having a credentials can "screen you out for a position." While some employers' concerns stemmed from negative traits an individual may have, other employers were concerned from a retention standpoint. For example, one General Manager speaking from her personal experience said,

> When I see someone with a degree it almost hurts them because we're more hesitant to hire them. They probably have outstanding debt and we just know the writing is on the wall. The might stay for a year, but that's it. I understand. I wish we could pay more and pay more to everyone so they could stay and be successful, but we just can't.

Based on these conversations not only do employers not value postsecondary credentials for most of their positions, but in some cases, employers even prefer candidates who do not have a degree to increase the likelihood they will stay beyond one year. This

comment was not uncommon and five other interviewees shared similar beliefs and concerns.

While there was general consensus that postsecondary credentials are not required currently or in the near future for most of the entry level manufacturing positions at the employers interviewed, what further complicated this question was considering how and why employers might value postsecondary credentials in the future. Most of this confusion seems to originate from articulating what a postsecondary credential signifies to employers and what the manufacturing industry will require going forward. One Human Resources Manager at a large plant said,

> Honestly, I would say from my perspective, BAs are less valuable now and into the future. No-one really knows what a BA gives you. There are all these fly by night online programs and all these majors that don't really mean much if anything. On the other hand, a technical degree or skill trade or things like that, I would expect that to be more valuable because people know what that mean and know what you can do, or at least should be able to do with that. If you had a two-year degree in machine programming or something along those lines, I would say that would be probably 10 times more valuable than somebody just walking in with a bachelor's degree.

This sentiment of ambiguity regarding what a bachelor's degree in particular means was shared among five of the interviewees. While this view is common among employers, some supervisors reported this is even how some of their employees feel who are employed in a position that does not required a bachelor's degree. One Human Resources Manager who has been supervising staff for the past eight years said sometime she asks her employees what they are planning on doing with their bachelor's and she reported, "they don't know. They don't know what they're doing. They just say I graduated high school, went to college, got my degree and then got a job. I just think they lack initiative. This job is just an interim gig for them." When one President / Owner was asked if a

credential is an indicator for staff quality when employees possess a degree even if the position does not require it. In response to this question he reported,

> For most of our non-exempt positions it doesn't matter one iota [if they have a degree or not]. There are no real indicators at all whatsoever. Some you think will be great last a day and some don't even show up at all. If you have a bachelor's that's great, but it doesn't change your potential for our work… They want to be paid and boy do they want to be paid. But they just don't want to work very hard for it.

Again, for most manufacturing positions a degree is simply not necessary or viewed essential. Furthermore, there appears to be a gap between how a degree is perceived socially and by the degree holder themselves, when compared with manufacturing employer perceptions for most positions. A production supervisor supported these comments and took it one step further by suggesting that some degree holders feel entitled and view a degree "as a short-cut to skip the hard work, long hours, and being held accountable." This comment made this supervisor even more reluctant to consider an employee with limited experience and a bachelor's degree for one of his openings that did not require a postsecondary credential. Often comments about postsecondary credentials were followed up with concerns about the way education is advertised or how the skilled trades or manufacturing as an industry are being perceived. For example, one Plant Manager noted, "my kids, my employees kids and even my employees have heard that what you need to do to be successful is graduate and go to college and almost everyone here is an example that you don't need to do that to be well-paid and successful." With the way higher education programs, and in particular the for-profit postsecondary programs are advertised it is understandable why some employees who have recently completed a degree may feel this way.

When discussing the value of a credential, employers were able to clearly articulate why they believed most of their positions did not require a degree, why they valued experience over credentials, and how a credential is not necessarily indicative of staff quality. Some employers also believed the future of manufacturing would place less of an emphasis on advanced credentials. For example, when discussing the future of manufacturing and training, one Production Supervisor revealed,

> You know, I wish we could train for exactly what my people do. I wish I could do that. But it would seem that as life goes on in manufacturing, you're trying to dumb it down, dumb it down, dumb it down unfortunately because it's all about reduction in error and in order to reduce error, you can't leave much responsibility to the operator.

This comment was especially resonating because much of the literature on the future of manufacturing in Michigan and across the United State focuses on worker requirements that go beyond a basic high school diploma (Carnevale & Rose, 2011; Hora, 2016). While this sentiment was not expressed by all the employers, eight of the interviewees reported they do not expect their preferences for postsecondary credentials to change much in the next three to five years further suggesting that postsecondary credentials are not essential in the eyes of manufacturing employers. One Owner said, "I'm a little bit negative on the future of education in manufacturing. We are always going to need people to make things and make decisions. The need is not there for advanced training and we aren't quite ready for robots yet." This sentiment was supported by two other employers and nearly all of those interviewed commented just how slow manufacturing as an industry, is to change. Although the manufacturing employers did not believe a postsecondary credential was essential for employees to be successful for a majority of their openings, employers did share that credentials fulfill a purpose of preparing staff to be successful in supervisory or leadership positions.

Value of Degrees is Limited – Implications

The perceived importance of both technical and liberal arts skills based on labor market projections is one of the key considerations of this study and understanding what employers view as the purpose of credentials has proven to be especially revealing. While there has some research in this area, for the most part, first-hand accounts are non-existent or limited. For example, Bessen (2014) found a lack of employer interest in credentialing for technical skills is simply be due to the fact that as new technologies are introduced into the workplace, some skills are so novel that postsecondary institutions cannot keep up with their emergence and subsequent adoption. This is one reason employers may rely more on experience as opposed to formal postsecondary education. As critical scholars have suggested (Capelli, 2012, Grubb 2006, Hora, 2016; Newfield 2008), the availability of talent and skills may not necessarily be the problem and as a result, higher educational institutions have been blamed for not producing enough qualified workers. While there is a need for degree holders in high demand fields (Carnevale & Rose, 2011), the common complaints from employers have very little to do with academics. Instead, according to Capelli (2012) and Hora (2016), most employer complaints about recent graduates are not with missing technical or academic abilities, but instead concern a lack of strong work attitudes and self-management skills. While not a major theme here, some employer did express concerns about employee not "having a good work ethic," "employee with a poor attitude," and one Owner simply stated "children need to be raised better. They need to be taught to be responsible for your own actions. This belief that you've earned everything when you've done nothing needs to disappear." Similar findings have been reported elsewhere with the DeVry Career

Advisory Board identifying 15 attributes missing from graduates and only one, communication, was related to an academic subject (Harris Interactive, 2011). Understating how manufacturing employers appear to value credentials relative to experience when evaluating resumes was also enlightening.

A foundational study in their area by Jeremy Arkes (1999) first explored the question what employers can infer about a workers' capabilities based on their resume. In this study, Arkes (1999) specifically looked at the role credentials play in employer perceptions of productivity. Arkes (1999) found that the acquisition of credentials does lead to wage premiums for those who do have postsecondary credentials compared with those who do not have a credential. While this may have been an obvious finding, Arkes (1999) also suggests "employers may value associate's and bachelor's degree because the acquisition of these credentials marks unobservable attributes such as motivation, character and perseverance – attributes that seem to be associated, by employers, with greater performance and productivity" (p. 140). While employers did point to some of these unobservable traits which have been previously discussed related to cognitive capabilities, employers did focus on "observable" traits or behaviors when describing a majority of their openings and screening processes for these openings. Another reason employers may emphasize experience over a credentials is perhaps because many of the technological and technical skills used in the workplace may be too new to be integrated into formal education curriculum and are often best learned on the job. This too, is supported by previous research (Hora, 2016) and would provide additional support behind why manufacturing employers value observed skills and experience based on transferability to a new role over a postsecondary credential. For this reason, employers

emphasized observable screening processes and criteria as outlined in the experience of a candidates as opposed to a postsecondary credential.

Reconnecting this finding back to the integrative deductive conceptual framework, there is some evidence that supports the main tenants of signaling theory. According to Spence's (1974) signaling model, individuals enter the labor force with different levels of productivity. Since employers cannot initially determine the true productivity of workers and acquiring this information can be costly, employers rely on other signals to attempt to predict or determine productivity. One common signal is the level of postsecondary education obtained by the employee which can be used to make determinations about productivity or a workers' wages. Based on signaling theory, more-productive individuals can distinguish themselves from less-productive individuals by completing a bachelor's degree or obtaining some other credential, thereby signaling their higher productivity. However, as outlined here, employers instead rely on previous work experience to make determinations about an employee's capabilities relative to the opening. While both filtering theory and human capital theory would suggest employers would prefer candidates with advanced credentials seemingly regardless of the opening, employers were frank in sharing that they often do not consider these candidates further because of concerns related to maladaptive personality traits and future retention. This would seem to go against the generally accepted labor market data which suggests employers are starving for well-qualified technical staff and jobs in the future will require certificates and degrees at all levels.

A recent McKinsey Global Institute reports that manufacturing in the United States needs "new capabilities and investment [from employers required for a] digitally

and technically skilled workforce" which will rely heavily on those with advanced training and educational credential (Ramaswamy et al., 2017, p.8). While that future is still a possibility, the findings here and the employers themselves state "we are not there yet" and manufacturing employers do not anticipate relying more on postsecondary institutions any time soon. In addition, local and regional reports on manufacturing in Michigan tout a similar message suggesting that manufacturing is on the precipitous of growth due to the expansion of technology, but that future cannot yet be realized due to an aging and uneducated workforce (Austin, 2015; The Workforce Alliance, 2009; Workforce Intelligence Network, 2015). Despite these reports, digging deeper into the manufacturing sector in general, what is presented here may be somewhat reflective of the industry as a whole.

According to a recent report by Renski (2018) who estimated the return on investment for postsecondary credentials in manufacturing, certifications and degrees are in fact rare in manufacturing with only 11 percent of the manufacturing workforce in the United States having either credential which is the third lowest rate across all major sectors (following retail and hospitality). This is much lower than the overall average where 25 percent of employer workers have either a certification or a degree (Renski, 2018). The present findings support Renski's (2018) core findings in that despite the proclaimed technological advances and worker skill shortages in manufacturing, employers appear to have little faith in the formal educational system to product the types of workers most employers need to be successful. Instead, as is suggested here, employers emphasize and value experience over postsecondary credentials for the majority of their positions.

Employer Supported Continuing Education Findings

This second findings section focuses on the question: How do employers support employee continuing education and degree completion? The previous research question and associated findings section identified some of the foundational beliefs of manufacturing employers as it relates to their perceptions of credentials. Their perception that postsecondary programming is only and especially valuable to a select number of positions also carries over to their beliefs about what types of employee supported continuing education they emphasize and support. While there are some outliers that will be discussed in more detail, for the most part, employers support both formal (utilizing postsecondary institutions) and informal (typically in-house training conducted by an employee or a vendor) training. With respect to the present research question, three themes were present: (1) Manufacturing employers are most apt to support employee continuing education that is directly related to the work of the employee, (2) When considering employee continuing education and / or training, manufacturing employers first and foremost consider the needs of the business, and (3) Most employers do support and offer tuition reimbursement.

Employers Emphasize "Business Needs"

As employers reported the ways in which they supported employee continuing education, the manufacturing employers used a consistent framing when describing and defending their thought process for supporting different amounts and types of continuing education. A common mantra that was consistent amount employers was "considering the needs of the business" as one General Manager put it or "needing to make a business case" as another business owner voiced for any and all continuing education. When

employers considered making a “business case” they often thought and considered education relative to the cost, not only in terms of the financial investment, but also in terms of the time of the employee and what would be lost from a production standpoint. In addition to evaluating the employer and employee investment, employers were careful when they described what education they were willing to support by justifying their stance based on the expected employee performance after having completed the training.

Justifying the Cost of Continuing Education

Before exploring what types of continuing education manufacturing employers are willing to support, employers first explained how they evaluate or justify such an expense. Viewing employee training through a cost lens is also telling because it suggests employers are not necessarily looking to contribute to the public good of the community, or desire to grow the capabilities of an individual, but are instead considering if the input of training will improve the output in productivity to justify the cost. Considering all of the employers included are for-profit entities this is hardly a surprised. However, the degree to which and the amount of postsecondary tuition financial reimbursement or support is nothing short of impressive. This will be reviewing in more detail under finding three.

When employers were asked how or why they supported certain kinds or types of continuing education, finances were an often cited as reason as to why employer supported educational program were or were not supported. Reason being, the cost of training is often not insignificant, but employers are also cognizant of the return on investment, especially as it relates to employee performance and productivity.

Most employer justification to supporting (or deciding not to support) any type of continuing education was based on their perception of cost relative to expected performance. For example, the General Manager of a small-start up firm stated, "Our perception is that continuing education costs money, and as a smaller start-up company, that's just not something we've ever thought we had extra money to go with." This suggests in part, that the lack of education provided is a function of size and funding available to support employee developed. While not explicit, this statement also indicates that the potential benefits to be realized by employers are not significant enough to justify the cost. The President / Owner at the same company addressed this topic head on when he emphatically said,

> You know, as a business owner, the things I am thinking about is, what is the ROI going to be for these items? I know there are those types of statistics and engineering you can only learn with some formalized training, but for us it's not that complicated. It's more of that leadership team level or top tier that I think that I would require more continuing education. The ROI is simply not there for most people and the jobs we have here. In my experience, even on their own, I haven't seen many cases where individuals have gone back to school to get degrees and learn things to be more capable in their role here. It might make them a better person or they might know some more things, but I just really haven't seen it where it helps them here. I would like to, but for our business and our needs, I just haven't seen it. As I see it, the barriers to post-secondary education support is that I just don't think they generally have the right classes to invest in that would actually help [our company].

Again, the cost for employee continuing education extends to both time away from the office, the actual cost of the training, and what employers expect employees to be able to do or what their potential level of performance is after having completed the training. However, not all employers were as pessimistic when it came to costs for continuing education.

While costs were a concern for all employers included in this study, not all employers viewed costs as an insurmountable barrier, especially when the benefits exceeded the costs. Another employer informed me that their organization finds ways to organize employer supported continuing education around production needs to allow staff to take part. One Vice President of Operations was especially proud and almost boastful when she described her organization's approach to employee continuing education.

> You know, we can't stop production for training. But for training that's worth it we find a way. That's a tricky piece, but it's possible. You just have to be creative and I like to think we are pretty creative here. The trainers themselves need to appreciate the constraints as well. If you have a good relationship with them, you can, in my mind make it happen – anything is possible. So we've worked out some interesting ways to make that happen. It's the need, what is it that we need to know. Logistically, how can we bring this to the plant so that we don't disrupt production. Then looking for, and maybe even before that step, looking for the right trainer. So maybe that comes before the logistics actually. I haven't thought about the process, so this is helpful for me. So yeah, I need to know who is in the best position to deliver this training. Working with them to come up with the logistics so that we don't interrupt production. Then, managing the process. You know, making sure that it happens. There's got to be someone on staff that's in tune with it, and make sure that what we said we were going to do, this with in terms of the grant, what we have now funds to do to make sure it happens. Then to do the follow up to review the results. Often times we can integrate the training right out of the floor and cycle staff through while still keeping a skeleton crew out on the floor.

This example recognizes that while employee continuing education is costly, if employers find it to be valuable, they will find a way to implement training as long as it supports the business needs. Four of the five employers shared sentiments similar to this when describing why they support certain types of education and not others. When discussing employer supported education a Plant Manager at another employer reported while they have received grant support in the past to fund training, the needs of the organization are still the primary determinant.

> Well first of all, there has to be a need. That's true, whether we get grant approval or not, the conversation will begin, and it's about to begin, is let's dream about what the best thing would be to do in terms of providing training to our folks today. You know, what is it, if you could have everything. If you could, all your training needs could come true, what would they be? I'm going to go, well actually I'm going to advise [our human resources manager] to go department by department and talk to the lead people. Maybe even talk to some individuals on the front lines. You know, some of the doers and say, "Hey, what is it that you're needing right now? What do you need to learn to help you be more effective in your job?" So it's going to start, definitely with the supervisors, but it's occurred to me that talking to the actual doers would really be profound. Not that all of it's going to come true, but boy I think we'll learn a lot. Okay, so it's true needs. This isn't about nice to know. It's about need to know. We all know those phrases. There are lots of things that are nice to know, but we're doing this for profit so it definitely is need to know. That's really number one. Number two is then deciding whether this is training that has to occur on the floor, in house, or whether we have the luxury of sending people someplace else. You know, that's critical, because we still have to keep making widgets.

This suggests that while finances are a critical component to determining whether or not manufacturing employers support continuing education, they are not the sole or overriding factor. For employers to invest both figuratively and literally in employee education, they must believe the education will ultimately support the needs of the organization. A Human Resources Manager shared a similar sentiment regarding training and expenses when she said,

> Things that, it doesn't matter who you are, but we can usually identify at least one thing that this individual needs to work on in the next training cycle... But rather than just talking about in that moment to really come up with a plan for how this is going to happen, or as a human resource person, be attuned to maybe the same thing that's come up on several performance reviews and say, "Hey, I'm seeing a trend here that we've got a lot of people who really need to be working on X, Y, Z. Let's now be sure to include that in the training if possible. If it's that beneficial, let's set it up as a company expense to make this happen." It really does become a part of the ongoing management of the business. Have we formalized it as much as we could? Maybe, maybe not, but we do have conversations about it and when the case is made, we move forward with it, but the case has to be made first.

The example showcases one manager who is very astute in her operations of the business and reported how she is monitoring the trends of staff development and when there is a concern, one potential solution is to offer a training. However, training is only justified as "company expense" when the training is going to ultimately move the organization forward from a productivity standpoint.

While employers considered the relative cost of training from financial and production standpoints, employers also found themselves making exceptions for training that could be perceived as benefiting the company. One President / Owner singled out the human resources profession specially when she commented,

> We don't have a lot of team leads or jobs that need a lot of continuing education per say because we're not that big yet but like our HR position is definitely one I always encourage her to keep up with credentials and certification, different things, there's new laws that come out and would be applicable to us especially essentially does oversee a lot of the health insurance, and that's always a big change.

For employers to justify continuing education it is not just about the costs from a financial or production standpoint, but it is also about organizational risk and seeing a direct connection between the training and protecting or advancing the organization. Along the same lines, another common justification for employers was "finding a way to see the connection between the education and your job" as another Human Resources Manager put it. Another President / Owner recounted a conversation she was having with an employee,

> For example, we have this new employee and she's fresh out of college so she still has that learning mentality and she enjoys it and is really good at it. If there's things that she's come across, I always encourage people to, "Hey, is there something that really interest you and it's your true passion?" and I can somehow relate that back to a benefit for the company, we're always more than happy to look at things and be helpful even if it's not a full paid but maybe it's partial pay or allows that flexibility of the time in order to do it.

In this case, even if the training was directly related or viewed as a company benefit it may be partially paid. This emphasizes the level of importance employers place on education being justified as a function that supports the business in order to not view continuing education as an expense, but as a benefit. Other employers used examples of specific systems they sought to training employees on. For example, one Controller said, "I have seen classes that could help my staff get better with reporting, better with spreadsheets or whatever the thing is to make their job easier, so therefore it would benefit us monetarily to have them know how to do it better and it saves me the time from having to train them." In this case the employer is referring to a specific skill that an employee will be able to utilize after having completed the training that will benefit the company.

This next example is rather unique in its sophistication because one employer connected their organizational scorecards (which track key performance indicators) for individual positions with employee performance evaluations and training. In this case, the link between the employer justification and training is clear –improve organizational performance is worth the expense of training to increase progress towards the key performance indicators. The President / Owner described their process as follows,

> Every quarter, the team lead along with their manager will be reviewing them. They have what we call their scorecards. Each employee has numbers that they're responsible for and that number and it's not to transform the employee to the number, it's more or less to help them gauge where they're at. On a quarterly basis, they're reviewed based on their performances. We collect the data and share it with them weekly but on a quarterly basis they sit down and they go through what we call the people analyzer and their scorecards. If they're not hitting numbers and they're not doing something, at that point we have an inhouse training program and coaching session that we will initiate. Once they complete that training they really get 60 days to improve. If there's still a problem after that then they're going to go to a second tier coaching and a more

> intensive training. After that, we can determine that further education isn't going to work and maybe they're not the right person for the right seat. At that point, we would have to make a decision. The employees are only not going to be happy at that point either, they're going to have that, they're going to know where the writings are going to be on the wall. Doing that in a quarterly basis at that time, that's the opportunity that's given that says these are the things that we have available internally in the company. With your initiative, with your job performance, with your skills set we think that you can go and move towards this and work towards this and here is some training to help you get there. The training piece is really important because it connects directly to those KPIs and for some jobs we pay for a trainer to come in, but if they improve and start hitting those number it's worth it, but for each person it's a little different. While it doesn't work for everyone, we have internal data to show how much progress people make across jobs and for the majority, [the company] see the benefits.

This employer is utilizing a program that supports employee career development through employer supported continuing education. But in order for this program to be supported by management, it must have an impact on the bottom line and improve employee performance towards key performance indicators. The present example also highlights one way employers can integrate continuing education while supporting the needs of both the business and the employee through the adopting of career pathways. Finding ways to support employee development and organizational performance is difficult and this appears to be an exemplary example of employer supported continuing education.

Supporting Training Directly Related to Work Implications

While discussed previously, manufacturing employers professed most of their positions do not require a postsecondary degree and for this reason, they are hesitant to invest more in what they deem as unnecessary education. However, when employers believe the education is directly applicable to their work they do take the necessary steps to find funds and time to get employees trained or educated. Although large foundations like the Lumina Foundation have articulated that employer supported education could be

instrumental in helping American adults obtain postsecondary credentials, but the employers here were mostly unaware and uninterested in championing a herculean effort to promote adult continuing education and degree completion (Lumina Foundation, 2016). Additionally, there have been calls for more research understanding how employers promote employability while balancing organizational and individual needs (Baruch, 2006). These findings suggest that organizational needs and short-term skill development come first and often at the expense of long-term employee development. It also appears that non-academic training tends to be more emphasized by employers that supporting more traditional on-campus (or online) coursework.

Despite past research on the public benefit of higher education (Blumenstyk, 2014; McMahon, 2009) indicating that society as a whole benefits in that college educated graduates pay more in taxes, are more likely to read literature, volunteer at higher rates, and are more likely to wear seatbelts, manufacturing employers did not once mention this as a potential benefit. Although manufacturing employers did not offer much insight regarding the purpose of higher education, they would likely disagree that the overall purpose and mission of higher education is to create well-rounded and prepared minds that benefit society (Blumenstyk, 2014; Fortino, 2014). In general, manufacturing employers believe that higher education can serve as a training ground, but more of what is taught has little bearing on the success of an individual at their firm with the exception of a handful of exempt positions.

The perception that is presented here of manufacturing employers in Michigan closely aligns with previous research by Peter Cappelli (2012; 2015) who argues that employers are hesitant to invest because of concerns over the cost, return on investment,

and whether or not the employee will become more marketable as a result and ultimately leave. While only one employer reported being disgruntled after an employee leaving after receiving an educational reimbursement only one organization who has a formal tuition reimbursement policy has a caveat for payback if an employee leaves within two years of receiving the training. What Cappelli's work fails to address are under what conditions employers willing to make an investment. Previous research conducted by Hora (2016) in another midwestern state (Wisconsin) suggests that employers did not question the ability of postsecondary education to prepare students technically, but instead employers were concerned about the educational system's ability to cultivate the broad-based liberal arts skills that are needed to succeed in today's global economy. The opposite appears to be true here with employers more concerned about the development of technical skills that are immediately relevant and questioned the value of liberal arts skills for most entry-level positions.

These findings do yield some insights that would serve to advance our understanding regarding employer decision making processes around employer supported continuing education in manufacturing. More specifically, this research provides the beginning of a research stream to better understand how manufacturing employers in Michigan view continuing education and justifying supporting different types of programs. The data suggests employers primarily emphasize continuing education when there is an immediate business need for the knowledge, skills, or abilities which are actually required to be successful in a given role. These findings do mirror previous research by Liker and Hoseus (2009) and is consistent with previous research on talent management (Bamberger, Meshoulam, & Biron, 2014; Capelli & Keller, 2014; Pobst,

2014). Talent management has multiple definitions in use, but will be defined here as "the process through which organizations anticipate and meet their needs for talent in strategic jobs" (Cappelli & Keller, 2017, p. 24). The growing emphasis on immediate returns on employer investments as it relates to talent management is clear based on the employer comments here. This is especially evident when considering the broad changes and expectations for manufacturing production to become leaner. Although this will be discussed in more detail in another section, employees are also likely concerned with immediate returns for investing in traditional (course and credits) continuing education as much as the employers themselves.

One of the most successful manufacturing organization in the world is Toyota who seems to have mastered employer sponsored training and employee development. While the Toyota Production System is somewhat similar to Lean and Six Sigma programs in that it emphasizes continuous improvement, creative problem solving, elimination of waste, standardization of processes and driving down costs, one unique component of the Toyota Production System is the emphasis on investing in its people (Liker & Hoseus, 2009). Toyota prides itself on being a learning organization and believes that this emphasis is what provides them sustainability in their manufacturing process (Liker & Hoseus, 2009). This may be because manufacturing in Michigan has been rather tumultuous and employers would rather react to changes and needs on an ongoing basis than make long-term investments they may have to divest in if the market changes. This is both a signal of the times and the manufacturing culture in Michigan.

Research on talent management over the past 15 years emphasizes that there has been a significant departure from the lifelong career (life-long employment with a single

employer) to multiple careers (with a shorter amount of time spent with multiple employers) and this may be another reason employers focus on the needs of the here and now (Baruch, 2006; Cappelli & Keller, 2017; Hall, 2002). Meanwhile, it is important to not underestimate the role organizations play in shaping careers. With advances in technology and increasing employer demands for knowledge acquisition, it would appear that now employees need more training and development than ever before (Gallagher, 2016; Ross, 2016; Susskind & Susskind; 2015). Despite the presence of a strong economy which in the past has been linked to higher investments from organizations in human resource management programs (Peters & Waterman, 1982), manufacturing employers in Michigan are still cautious about such investments.

Employers Support Short-Term Education Directly Related to Work

When employers were asked about the ways in which they support continuing employee education most manufacturing employers were quick to identify onboarding programs, the maintenance of staff certifications, and general orientation training to ensure staff are productive. Almost all of these trainings were short-term in nature and directly related to the primary duties and responsibilities of the position. As discussed previously, part of justifying the cost for investing in continuing in employee education in the minds of manufacturing employers relates directly to employee performance. This was especially noticeable when employers were asked to what extent they feel responsible for getting employees "up to speed" once they have been hired or once they have moved to a new role. Much of the continuing education that was referenced by employers was typically conducted on-site, short-term in nature, has an immediate impact

on performance and is something that employers can observe – both the training itself and the performance impact.

Supporting Immediately Applicable and Observable Continuing Education

The examples employers most often cited first when discussing employer sponsored continuing education were trainings that we either done on-site (or "in-house") or training that was done as part of the employee orientation (or onboarding) process. Most manufacturing employers had not really thought of their training as "continuing education" as they considered the training they did as "simply necessary to get our work done" as one Production Supervisor put it. Along the same lines, when discussing this topic, one President / Owner was very matter of fact when he stated,

> We pride ourselves on doing a lot of the training ourselves here. Now, when you go get into the computer and CAD portion of it, we need people coming in here that already know what they're doing. The thing is for a lot of our jobs we can do needs assessment of the person and provide specific training for them. But again, for some specialized positions we will hire say, aluminum welders who already know how to weld. LCC has a certification program for aluminum welding. But for most of the jobs, we do the training and I think we do a pretty good job. Most of the trainings are seven to ten days or so. For example, it's amazing what a difference training makes to someone who walked in the door and knew nothing about assembly or manufacturing. And you can see this difference in a few weeks.

Employers are not only willing to support training when it relates directly to the job at hand, but they also expect to invest some training to ensure that employees are able to be successful on the job.

Most manufacturing employers were careful in describing why they provided short-term educational training and a common reason was because they processes by which the work is done is unique at their facility or within their industry. For this reason, a certain amount of short-term training is a necessity in order for the employee and the

organization to be successful. One President / Owner expressed why this was important regardless of the amount of education that is required for the position,

> Formal education teaches you that everything is logical. That's not how things work in our business… When we started, the staff grew with the company, because of course, we were starting from nothing. And so, as we grew people did step up, and were talented, had that opportunity to grow, and get ahead. So, although I very highly respect education, it's for a lot of the things we do, it's not necessary. And I hate to make it sound like the our industry is the third world of manufacturing, but to a degree, it is. The worst thing you can do in this industry is bring in somebody that who was in automotive, and highly educated. Because they expect things to work in a logical manner. They don't in this industry. It's a very much seat of your pants industry still. So when we bring someone in, for any position really, we have to orient them not only to the job, but the processes here. No one can come in here and immediately contribute. I'd love to say they could, but they just can't. And this is why we do hands on training with everyone.

Manufacturing employers are very invested in their employees success because it directly relates to the success of the business. In order to ensure business continuity and reduce the time for employees to become productive, all five of the employers communicated different types of short-term training programs they utilize to support employee education from day one. When it comes to training out on the floor, most of that training is conducted by "a group leader or depending on what department they're in the supervisor. All our shop floor training is done by them" as one Human Resources Manager reported.

As employers consider when to invest in training, ensuring the business is able to operate at capacity is a critical consideration and with qualified staff being less available and prevalent, manufacturing employers are more likely to invest in training than in years past. This was especially evident and is illuminated by the comments of one Executive Director at a manufacturing association commented,

> My members are more and more aware that they are fighting over a smaller and smaller slice of pie. Good people are no longer really looking. Desperation is really ratcheting up. Too many baby boomers are retiring

> and demand is sky rocketing for some of these skills. The only way to cover this gap is to try and hire good people and train them. Manufacturing isn't used to playing the long game, but they are realizing that this training impacts their bottom line. Having staff in training is better than not having any staff at all. Manufacturing may be slow to adjust, but they're not stupid either.

These comment reinforces the notion that employers are reluctant to invest in employee training unless it directly support the bottom line needs of the business. Inherent in this comment is that employers appear to be more willing to hire staff and then train them than they were before simply because the business need is there.

Manufacturing employers also cited examples of other training that did not occur during an employee's orientation or onboarding process. However, a common thread was the short-term nature of the training, the location where the training took place, and that training was for a specific skill for a particular position. One President / Owner communicated the following example:

> Out on the floor they have these meters under what we call their dashboards and on the internal side we have ERP [(enterprise resource planning)] staff. The ERP staff do all the material and production tracking. Our staff who do tracking in our ERP system, have numbers on what they're responsible for, so many listings a day, so many revisions, how does what we are doing compare with our needed production, what's the material count – what is the data telling you? What type of algorithm is used depends on the platforms, they're all different so trying to identify what's wrong with the algorithm can be difficult. There's definitely required in house training required to help trying to identify that. There's questions that we put down, "These are the things that you need to ask about this listing when you're doing it." There's trainings… Sometimes if they don't have some formal training in Excel, there's some functionalities and things like that we'll need them to learn and them to know, so we'll do that. Sometimes we will have our vendor come in and do the training o-site and sometimes we will just do it. The purpose of the training is going to be primarily making sure that they know how to keep the data updated and understand what feeds into it. Our ERP system is one that we own and we control all that information but they need to fill out the templates and the forms for those. This job is really important and doing all this work accurately is critical for our management, sales, and production teams.

This comment was not uncommon and all of the employers at different times described examples of short-term training they provided to employees over the course of their employment to educate staff on different aspects of their position. However, employers are also not under the assumption that investing in staff would increase loyalty. Another President / Owner addressed this specifically when they stated,

> I don't think there's really any concerns about investing on employees. Number one, you want it to make this employment thing work and number two it's not about loyalty, it's about getting them up to speed. You can't tie someone to a company or to a job for the rest of their life. It's just about is this person aligned with our core values? If they truly are, investing in them is almost the same as investing in the company, truly is. They need to be reliable. They need to be tenacious and they need to be innovative. If they match those three things are aligned with them, I think investing in them is one of the most important things a company can do.

This comment suggests that the Owner recognizes that the employment relationship is a partnership and in order for each members to benefit from the partnership they both need to be invested. From the employers standpoint they need to ensure the staff are provided with the education to do the work and from the employee standpoint if the staff member is successful and embodies the company's core values they will be rewarded with additional educational opportunities or advancement within the company.

While some of the training was specifically geared towards building competency, other short-term training offered by manufacturing employers was also offered to increase general knowledge. For example, when reviewing continuing education offered in the accounting department one Human Resources Manager said,

> The accounts payable and receivable, we've looked at encouraging them to do some things that's even a paid environment so that they have a little bit better handle and grasp on it and more seeded. A lot of that has really done with just working with our finance person, and keep making sure that they're having a better understanding in working more with our accounting firm so that they understand when this account is going at this, why it needs to be reconciled like this, why different accounts are reacting

> differently into companies and someone. I would say the accounting or finance department, the HR and then our internal operations manager, so we've invested a fair amount in him to learn more about our ERP system and to be more of an admin in that role taking over what I've been doing for that and then taking a step further and a step further.

Another employer also reported their continuing education while also short-term in nature also extends to building staff knowledge even if the training is not focused on a specific skill. Another example of this is a Human Resources Manager who commented that they purchase training in advance and require staff to complete a certain amount per year. This President / Owner revealed the following when referring to a quality position,

> Training, so we'll purchased a year's worth of training so that he can go into it online and do when he's required to do x amount of them every quarter. Not for a certification, but just so they can do their job better. Just to gain additional knowledge. Every quarter, he's required to do so many of those trainings to just expand his knowledge, expand our knowledge, and it helps us improve the processes internally for the company.

From the perspective of the employers short-term trainings are preferred given the reduction in time required to apply that new knowledge in a way that benefits the company. This particular employer was also somewhat unique because this is the only employer who offered or made mention of any online training. All of the other continuing educational programming offered by employers was done on-site either by staff members, a supplier, a vendor, or an external specialist who conducted the training on site.

However, for the most part, employer sponsored continuing education did focus on building specific skills. One Vice President of Operations said,

> I think that everybody that's in the offices and could benefit from furthering their computer knowledge and program knowledge, not necessarily programming but just general knowledge of Excel and Word and even Outlook. It's surprising because computers were a part of why I hated at my schooling until high school. We have staff who know how to work a phone and they know how to work their iPads but they struggle sometimes with working operating systems of a PC.

At different times ten of the individuals interviewed at some point during the interview made mention of specific skills their organization supports the development of or provides training to enhance. For the most part, this training was for positions on the manufacturing floor. For example, one Plant Manager described their plant training process when he reported,

> Well, we would, and really this is true in all cases, we set up a training program for them out on the floor. We go through some basic stuff here in the office first, but if it's in the plant, generally speaking, they're mentored by another skilled machinist in that department. We like pairing the newbie up with the experienced person so that they get the basics. They have someone then they're reinforcing the training. Answering questions. That's generally how it happens on the floor. In the front office, with some of our salaried positions, we actually put a training plan together which involves them spending time on the plant floor, as well as then having one on one time with different people in the front office. So it's a combination. This typically takes a week or so and then we're off and running.

Relying on a combination of internal staff members to lead the training as well as some standard orientation material was common among manufacturing employers. Another Production Supervisor communicated a similar process when he said,

> When I start out a new person, I say, "Okay. I want them to start in the engraving department." All right, I've got this guy on second shift who I consider the expert in that area. And so now you're going to work with Will and you're going to take notes. You're going to watch Will, he's going to talk to you when he's setting jobs up, he's going to talk to you when he's evaluating, and you're going to write notes and you're going to use those notes and then he's going to start telling you to set up a job and he's going to start watching you." And so put a lot of onus on the operator, on the trainee, to learn it and to be responsible for learning, but they are the experts and what they are showing them to do is how to do the job and there is no real other way to teach it.

On the floor training was mostly a mentor – mentee relationship in part due to the unique processes utilized by each employer and in part due to the lack of relevant experience candidates have when they start the position. While employers were often hesitant and in some cases reluctant to suggest that employees could or were willing to learn work

related content on their own, manufacturing employers did take the lions share of the responsibility to keep their staff current through short-term continuing education programs. One Human Resources Manager focused on the employer's responsibility to keep staff up to date on work related standards specifically when she said,

> Well, I would say clearly there is a connection. The programmers, that may be a more tangible example, they have to remain current with the software. So as there are updates to the software, our programmers have to be able to utilize those updates. Yeah, sometimes there's probably some self-teaching that goes on, but if you want to move it forward more quickly, you know you put them in a situation where they have an instructor who's helping them move through those updates more quickly. That's our responsibility as the employer. I think it's a timing thing. As a business, you can't wait a whole year for someone to self-teach. You can't expect that from staff. If there's an update, you want them within a very short period of time to be utilizing those updates. That application helps us, it helps out clients, and it makes us more productive. We need to own that development.

Manufacturing employers were cognizant of how employee knowledge and development directly impact their business. In this case, the employer was open and direct about needing to take responsibility for staff continuing education. Not only was this employer clear about needing to take immediate action, she was also clear that promoting and providing such training is the responsibility of the employer.

Making a business case for supporting continuing education did not end with onboarding a new employee or an existing employee to a new role, but continued to focus on ensuring staff are capable in their role based on the needs of the position and the company. In order to comply with those needs, manufacturing employers rely on short-term internal training. One manufacturing President reported an example of continuing education on the production floor.

> For our last in-house training we brought in a trainer. We had just bought a new grinder. All three of our CNC grinders are Toyota grinders. We had just taken delivery of the third, and it was perfect timing with the our new

> floor staff. We thought "wouldn't it be cool to have the training done by a Toyota technician on the floor at [our company] so that all of our grinders on both shifts, that they would all start grinding in the same way." So that from person to person, shift to shift, there would be consistency in the grinding process. So that's what he did. The result of that is fewer errors coming out of that department, because now everyone is doing it in the same way. We know that it's utilizing best practices that come right from the vendor.

Although employer supported continuing education can take multiple forms, employers seem to have a preference for skills based training or training that is conducted in-house that they have a voice in developing. Additionally, there is an emphasis on shorter-term training that has direct applicability to the work at hand, the performance of the employee, and ultimately, the effectiveness of the firm. One Controller commented that internal training and cross training in particular was important due to the time savings. Unsurprisingly she noted,

> From my perspective, it is literally like I don't have the time to go have somebody else do it, so I'm going to do it. I need to have the people in my department cross trained appropriately. If it's not done right away than it's not good use of that FTE [(full time employee)]. I don't really like having to do the training, but I do. I mean, that's really how it seemed to work best. There wouldn't be somebody else that could do it, and the way we end up functioning the best requires me to do the training once they are hired.

While employers valued hands on training where they could realize immediate value, manufacturing employers were also strong advocates for training early on in the onboarding process because employers felt a great deal of responsibility to make sure their employees are successful.

When one President / Owner was asked, "to what extent do you, as an employer feel responsible that employees at your firm are successful?" In response, the President / Owner exclaimed, "Oh, we take that quite seriously. Yeah, it is our responsibility to ensure they are successful. That begins from our hiring process and runs right up to their

first day. We provide a fair amount of training and ultimately take responsibility for employee failure." Although employers are concerned with the costs associated with training, again, the needs of the business run paramount and this particular employer even stated that they feel responsible for ensuring employee success. This may be because it is the responsibility of the business owner to ensure the success of the business and in order for the business to be successful, the employers must be capable of doing the work and that starts with orienting them to their position. Another President / Owner was asked what percentage of an entry level job they orient staff to. He stated, "Oh 100 percent I don't expect anyone to come in to those jobs knowing what to do. If they can read a tape measurer they have a leg up. We have a whole training program out on the floor they go through to get up to speed." In terms of employers providing continuing education, it was fascinating that many employers brought up their employee orientation and onboarding processes. Although most of the orientation programs described were short-term in nature, one Human Resources Manager reported,

> We do a lot of on the job training. It takes, on average, about six months to train an employee, even on the salaried side. We'll rotate them through all the different value streams, so they can see how all the products work together, but by the time they're done doing that, you're talking about months later. From an organizational perspective, we require this because we expect a lot from our employees and if you only show them a piece of the pie, they will never understand how everything fits together. No matter which company you're at you will learn something from our training. I think some jobs have certain fundamentals, yes, but most of it is on the job and can be taught. And honestly, it's the only way we can ensure things are done according to our specs, the [organization] way.

Despite the costs that are involved with some of the training, employers are able to justify it based on the perceived or observed performance increases among staff. There is also an underlying notion with this example, that training is unique to their company and in order to reach an expected level of performance, a certain degree of organizational training is

not only necessary, but required to hit the performance benchmarks. When I inquired as to why an entry level inspector position would require six months of training the Human Resources Manager responded by saying,

> You would be surprised at the difference in performance. It's huge. I've had people come in that do similar work, but they can't do what we do here. Even with the experience they have to be trained just 'cause of the high volume of stuff they look at and the importance of the items they're inspecting. You have to look for the right things because there is a lot at stake and if the employee can't perform we need to find someone else. That initial orientation helps get them situated to meet our expectations.

When considering employer support education although employers are concerned with costs, the performance of the business is what appears to drive employer investments in employee education throughout the lifecycle of the employee. While most employers stated they provide employers with some level of training prior to starting or immediately upon starting, manufacturing employers were always able to justify the time and expense doing so because it "supports the needs of the business and without it, we wouldn't be as successful" commented a different Human Resources Manager.

Most employers expressed concern or a need to ensure the training would be "worth it" in terms of performance, there were a few individuals who reported that for employer support continuing education "it doesn't matter who you are because I think that if you are learning it will help us down the road and an employee knowing we are investing in them promotes loyalty and dedication to our product and our customers. And that's better than an ROI I can see on a spread sheet" commented one President / Owner. Another employer connected continuing education with organization wide improvements regardless of whether or not it applied to a specific individual or enhance their performance. This Plant Manager shared the following example:

> Three years ago we did a company wide continuous improvement training and it wasn't as impactful as I hoped, but at least was exposure to getting people to start to understand that there are tools and there are approaches that, if employed, helped to correctly focus your efforts. So exposing a company of 40 to that, probably 25 percent got something out of it. The other 50 percent you know, probably got lost during the meat of the presentation and then there are 25 percent of people who… They're the type of people that enjoy the idea of improving their daily lives. I just wanted people to appreciate it or see it and say, "Hey, this is sort of interesting." You can't solve all the problems. You have to prioritize. You have to evaluate and data is necessary. And if that resonated and they were ... I think there's a lot to do with entrepreneurial spirit. People that want to have responsibility for their work lives more rather than the persons that just want to show up and do their job. It's front and back, inside and out. But I came to appreciate the idea behind lean training and I wanted to share it. Because again, I love the group of people here in general and I thought, "Man, I want them to have that exposure." And so then this training came along and I'm like, "This is what I want to do. I want to add this training for the whole group. The whole plant. And I want these cross-functional teams and I want to break this cohesion." Grandiose ideas, but like I said, and you're probably leaning this now, when it comes down to actual education or training, if you can impact and cause some level of change in 25 to 50 percent of those participants ... I don't know it's worth it. And in reality, can you ask for better than that? I don't know. I don't know what the numbers are, but that's what I saw is that you had a group full of like 10 to 12 people in a room and four or five people made it work, made it happen, and then two or three of them were way into it. And so I was like, "Ah!" It's worth it and you just hope for the others, some day down the line things will connect.

While most of the manufacturing employers would have scoffed at the idea of a training being attended by the entire staff where only a quarter of the staff were able to apply anything they learned, this example highlights the immediate applicability that most employers emphasized. Conversely, in this example, this employer focuses on both short and long term use of the knowledge and generally accepts the notion that not all staff will apply what they learn anyway.

The Needs of the Business Drive Training – Implications

A recent study conducted by the Georgetown Center on Education and the Workforce reveals that employers are the largest training providers having spent $413

billion on information and on-the-job training annually (Carnevale, Strohl, & Gulish, 2015). This study suggests that employer-provided training accounts for the highest percentage (46 percent) of employer sponsored continuing education. While exact financial figures were not gathered for the present study, the content gathered during these interviews would appear to support this notion because all employers did have position specific training programs that were employer sponsored. While this will be covered in the next section, although employers do provide employees with the option of pursuing formal education, very few employees take advantage of this which is another reason that in-house training would appear to be the most significant investment for manufacturing employers in this study. The Georgetown study also collected data by industry and manufacturing was identified as the industry that invested most heavily in training considering how manufacturing only accounts for 11 percent of works in the economy, but accounts for 14 percent of spending on training (Carnevale, Strohl, & Gulish, 2015). Although some argue that employers do not provide employees with enough training (Austin, 2015; Ramaswamy et al., 2017; The Workforce Alliance, 2009), this may not apply to manufacturing in Michigan as is appears, at least among the employers interviewed here, that substantial on-the-job training is provided to employees. In addition, while some literature has argued we are on the verge of automation taking over (Frey & Osborne, 2013), especially in manufacturing, that again does not appear to be the case here as employers shared that sentiment. Employers were also clear about their reliance on talented human beings.

Although previous literature on employer supported training suggests employers invest in on-the-job training in an attempt to reduce turnover (Bersin, 2013), but

employers were clear about their intentions with training – to reduce downtime and increase productivity. Another existing finding in the literature is the preference for employers to invest in skills or training that is immediately relevant. One reason employers may be skeptical about the benefits employer-supported training that may benefit them in the long-term is because they are concerned whether or not those skills will still be relevant in the future (Cappelli, 2012). While this did not come up here, employers were adamant that they invest and support that they do because it is immediately relevant. This would provide support for the resource based view of the firm theory because the fact that employers are only and most likely to invest in firm specific training suggests that firms do believe that such training can be viewed as a sustainable competitive advantage that may not be of value to other employers should they try to "poach" their employees.

Previous research on manufacturing echoes this finding and the supported reasoning. The Toyota Production System is a well-known production manufacturing and management philosophy that was originally call "just in time" production and is known for being among the best in the world (Lander & Liker, 2007). However, the employers interviewed here seem to be only concerned with their immediate needs and train just enough to ensure the job is done correctly and appeared to not have more comprehensive plans for ensuring the organizing maintains a learning culture. Toyota's commitment to develop their people and protect their jobs has resulted in a reciprocal culture which has resulted in unmatched quality over the past several decades (Liker & Hoseus, 2009). With manufacturing being the focus of this study, this is an excellent example that highlights how organizations can be successful while emphasizing internal employee

development and training. Investing in internal talent and growing staff for specific occupations with the organization reduces the need to rely on external talent and is something that is unique to Toyota. This is an excellent example of mutual employer and employee benefit that is worthy of further study as it is unclear how employers may consider approaching this type of equilibrium.

Employers also took great responsibility for ensuring staff were successful. Some scholars (i.e. Cappelli, 2012) argues that employers rely heavily hiring external employees, have withdrawn investments or eliminated internal training programs, and rely on human resource information systems to filter applicants (which results in credentials being view in a single dimensional way), and believe it is the duty of higher education to respond to signals in the external labor market. This study supports the contrary with employers taking a great deal of care in ensuring staff are productive regardless of what position they are hired for to ensure they are successful. Although the hiring processes were not reviewed in depth, participants were asked about what percentage of the job they expected hired candidates to be able to perform once hired. While it was not anticipated for this to be a difficult question for employers to answer, very few were willing to share an exact figure. Those that did share an estimate reported that between 25-50 percent and even those that did not share a number they were adamant that as the employer, they took equal responsibility with the candidate to ensure they were successful. As one Plant Manager noted in the interview, with unemployment the way it is, employers are not in a position to be picky and this is why internal training programs can be instrumental in ensuring individual and organizational success. These findings also support the general consensus that that employers retrain when they can do

so faster than they would be able to hire and when labor market conditions make hiring from the external labor market challenging (Cappelli, 2004). This was one point that was really driven home by the comments of the manufacturing association Executive Director who echoed the exact same sentiments.

Connecting the present study to the current literature stream, there is a distinction among scholars about the difference between training and education. Training is the "direct instruction of how to perform a specific task such as pipefitting, welding a T-joint, or operating Microsoft Word" (Hora, 2016, p.100). Training is typically shorter in nature and has been considered unlikely to develop the knowledge, skills, and abilities that are in demand for 21st century positions. Educating on the other hand is the cultivation of deeper learning and habits of the mind that will serve students throughout their lives (Hora, 2016). One of the primary distinctions between these two terms is the time requirement. Technical skills can be acquired in a short-term training session, but these are likely to be less transferable because they are usually focused on mastery of a single task that is applicable in a limited number of settings. Educating is just the opposite. The fact that manufacturing employers emphasize and support short-term training has meaningful implications for higher education. In particular, for most positions, employers focus on the cultivation and development of proficiency on certain skills. For this reason, moving forward, employers may find more value and favor short-term formal educational programs such as certificates, badges, or short-term bootcamps over a traditional associate's or bachelor's degree.

This study does have implications for education as it contributes to the debate trying to determine where and how education contributes to employment and employer

expectations. When considering the notion of a skills gap, there are six key assumptions that have been identified by Hora (2016): (1) employers are having a difficult time finding skilled workers, (2) technical skills utilized in specific occupations are what industry needs, (3) the focus of education should be on middle-skill jobs that don't require a four-year degree, (4) postsecondary curriculum and liberal arts are the primary causes of the skills gap, (5) the skills gap is a technical problem best addressed through the development of academic programs, and (6) the focus of change should be on one sector – education. The information gathered from employers does address some of these assumptions directly. First, manufacturing employers in Michigan are absolutely having a difficult time finding skilled workers, in most cases more so than professional or exempt staff. Second, technical skills are what employers spend most of their in-house training efforts on and most of this training is unique to specific positions and industries. Third, while this was discussed earlier, most of the manufacturing positions do not require a two year or a four year degree. Fourth, most employers did not have a strong relationship with postsecondary institutions which is why this was not discussed at length in the paper, but manufacturing employers do value technical skills over liberal arts skills for most positions. Fifth, employers did not offer many suggestions regarding how the skills gap should be addressed as most took it upon themselves to implement relevant training and development programs in order to survive. However, I believe there is an opportunity for local or regional postsecondary institutions to partner with manufacturing employers to lead or develop training for specific employers. Lastly, again, employers did not request or lament the loss of postsecondary institutions as a partner, but I believe for postsecondary institutions to become more relevant for manufacturing employers in

Michigan, they must change their working relationship with manufacturing employers. There is also an opportunity for manufacturing employers to learn about what types of postsecondary coursework or training offered by traditional colleges and universities would support the activities at their plant or facility.

Addressing the topic of employer and postsecondary partnerships in Michigan, the Michigan League for Public Policy published a recent article, *Willing to Work and Ready to Learn: More Adult Education Would Strengthen Michigan's Economy* (Ruark, 2018). Among the multitude of suggestions in this article, one focuses on providing adult education in the workplace as part of on-the-job training. Ruark (2018) suggests that postsecondary programs could offer adult education programs on-site with manufacturing employers focusing on reading, language or mathematics which would allow staff to advance in their position or become more proficient in this jobs. Providing education before or after work could help workers avoid transportation barriers and could start to build trust with employers for fostering more programming. Another valuable and equally important suggestion is the development of career pathway systems. In the interviews employers acknowledged that a lack of a formal career development pathways was problematic for both the employers and those pursuing advanced training or education (Ruark, 2018). In part, there is a lack of such pathways because employers are not sure what positions will be available, when they will be available, and what business needs or skills will be required in the future. In general, it will be difficult for manufacturing employers in Michigan to partner with postsecondary institutions if they continue to prioritize immediate needs and a "work first" philosophy over long term skill building and economic self-sufficiency.

Considering these findings in light of the six credentialing theory framework yields additional insights. The theories that are most relevant here are human resource development theory and the resource based view of the firm. Although employers are concerned with staff performance in the workplace, organizations are not concerned with ensuring staff reach their human potential. However, organizations are unyielding in their pursuit of staff proficiency in all positions across their organization in order to reach performance expectations and benchmarks. Becker's (1962) work on employer-supported training argues that employers find it difficult to provide training or retraining that would also be useful to competitors, unless employees shared the costs. The findings from this study suggest that in manufacturing in Michigan, for the most part, positions and employer and industry expectations are so different that training conducted by individual employers is really only valuable in that position for that organization. For this reason, the primary principles of the resource based view of the firm hold true here when considering why employers primarily support in-house, on-site training for nearly all of their positions without any postsecondary assistance. Although employers have been consistent in their description of their needs and under what circumstances postsecondary education would be valuable, an unexpected number of manufacturing employers do provide robust and formal degree completion initiatives.

The Majority of Employers Do Support and Offer Tuition Reimbursement

Lastly, when the topic of adult degree completion was explored, I was shocked at the prevalence of formal tuition reimbursement programs offered by this select group of employers. Of the five organizations surveyed, four have well-defined programs that can be found in their employee manual and one provides selective reimbursement which will

be covered in more detail. While most employers were generally unaware or uninterested in the degree completion problem in Michigan, they were proud of the tuition reimbursement programs they do offer. However, a majority of the interviewees were well aware of the relationship between unemployment and postsecondary enrollment. As an example, one Plant Manager said,

> Well, once we get down to this three or four percent or whatever the heck the unemployment rate is, that's just the way it is. I don't know if it's ever been this good. So when you have that, I think you'd be ignorant to deny the fact that there is a lot of opportunity out there. If you wanted to be hard lined today, you're going to be out of business. We have made some hires we normally wouldn't when unemployment is at five or six percent. If you're only going to take a certain type of individual, you better be paying above the top. You'd have to be offering something substantial, which is hard to do, or you're going to compromise and try to make it work as best you can for this time in history. Right? And when you can get paid well now for what you know, why go back to school?

While examining the relationship between the unemployment rate and postsecondary enrollment was not the purpose of this study, this commentary does add to illustrating the picture of employer supported adult educational reimbursement. This section will be organized by first reviewing what manufacturing employers offer in terms of tuition reimbursement (i.e. who is eligible, what is reimbursed, and what are the conditions) and then discussing why employers offer these programs. The final research question will cover employer perceptions of what types of employees take advantage of these programs and what barriers they see that inhibit employees from returning to school.

The one organization who does not have a formal program reported they follow "a star employee model" as their General Manager put it. In this case, employees who "show promise and would really benefit from a formal education program are the individuals that we approach" stated the Owner / President. While the President commented that he would be "open" to others asking to have tuition reimbursed, "it has

just never happened before" he said. Part of this organization's ambivalence to having a formal program is because when they have worked with postsecondary institutions in the past to on a work experience for credit basis, the "student has always gotten the credits that they needed, learned a lot while they were here and then left. We'd always hoped that someone would want to stay on afterwards, but that's never happened." This employer is also somewhat nascent in organizing their employer supported educational reimbursement programs having only been in existence as a company for nine years. The other four manufacturing employers included in this study offer formal and well-defined tuition reimbursement and the specifications of their programs will be reviewed next.

Table one (below) outlines what is furnished in the employer's personnel manual as it relates to tuition reimbursement. The one firm that does not have a formal plan is also included in this table, but information on that organization is based on personal communication between the Human Resources Manager, General Manager, and President / Owner. While not all the employers have formal programs, employees at each institution do theoretically have the opportunity to have postsecondary coursework paid for by their employer. Based on this descriptive data from the five employers several trends are present. Four of the five employers require coursework to be directly related to the current (or future) duties and responsibilities of the incumbent. The two largest firms included in the study have separate limits for undergraduate and graduate coursework. Only two firms offer tuition reimbursement immediately upon hire and three organizations do not have a formal limit on educational expenses. When asked about this, two of the employers revealed this would need to be revised "if employees started actually taking advantage of what we offer" reported one Controller. All of the employers

who have a formal program do require employees to complete the course with a certain level of proficiency in order to receive a full reimbursement. All of the employers require some type of pre-approval before a course or employee will be eligible for reimbursement. Most employers also delay reimbursing employees until the course has been completed and a final grade that meets the employer's threshold of reimbursement is furnished by the employer placing the initial financial burden on the employee themselves. Another common trend reported by three employers was providing employees with tuition reimbursement if they were willing to go on their own time. For example, one President / Owner said,

> We are willing to support them, but it is totally financial. They're too critical to us to let them go during the normal manufacturing day. When they are here we need them to be here 100 percent. We are not a training facility, we are a production shop. So, it is, we will, I think we still pay 100 percent of their tuition, and if they get a B or better, and they just have to go through HR now... And then either [the President] or I will approve the class, which like I say, we virtually never turn anything down. But, it does have to be done on their own time. Not during business hours.

This employer commented how they are willing to support employees who would like to better themselves by completing postsecondary classes or other training, but it must be done outside of business hours. Thus, if an employee with some college and no degree wanted to complete their degree in this case, the employer would support it, but the employee would have to balance being a full time employee and a part-time student. Although each program has unique nuances, the fact that each manufacturing employer included in this study offers some form of employer sponsored formal postsecondary educational reimbursement was not expected. However, according to an Executive Director at a local manufacturing association employer supported educational reimbursement is perhaps as common as presented here. When discussing the certificate

programs his association offers he mentioned, “at least 85 to 90 percent of the employees who attend class here have the class paid for by the employer. And of that remaining 10 to 15 percent about half of those employees are reimbursed directly once they have passed the class.” Taken together, close to 95 percent of the certificate training offered by this association is ultimately paid for by the employer assuming the employees who enroll in the program attend class and satisfactorily complete the eight week certificate course. The Executive Director also commented that the “eight week rolling semester courses are more attractive than traditional postsecondary classes to employers because it allows more people to enroll on an as needed basis which is appealing to employers.” Based on these comments and other research which will be reviewed when discussing the implications, the data presented here is in line with the norms of tuition reimbursement across industries and is close to what has been reported for manufacturing employers specifically. This is the first study of its kind to present data specifically on the state of Michigan. Most data that has been collected has been done so on a national scale and has not taken into account differences among and between states or industries.

Table 1: Overview of Manufacturing Employer Tuition Reimbursement Programs

Employer	**Employer 1**	**Employer 2**	**Employer 3**	**Employer 4**	**Employer 5**
Number of Employees	160	90	55	20,000	15,000
Who is Eligible	Any Full Time Employee (immediately upon hire)	Selected full time employees who asked or approached by management.	Any full time employee (immediately upon hire).	Any full time employee after one year of continuous employment.	Any full time employee after one year of continuous employment and must not be on aa Employee Corrective Action Plan.
What is Reimbursed and what are the conditions.	100 percent of classes where the individual scores B or better. Costs associated with conferences and exams are covered, but must be approved in advance. Employees can take any class and it does not need to be approved in advance. Classes must be taken outside of normal work hours. Only tuition is covered. Tuition is reimbursed once final grades have been administered.	100 percent of tuition and associated training material is reimbursed if the course of class is attended. Employees must seek management approval to have the opportunity to consider reimbursement. In most cases, management identifies classes and eligible employees. Courses must be directly related to the job.	100 percent (for an A, 75 percent for a B, 50 percent for a C, 0 percent for a D or below) of course including books and tuition. Reimbursement is furnished once the course is complete and a final grade has been administered. Must be approved by the Vice President of Operations. Any course as long as it is related to current or future work done by the employee at the firm. Classes must be taken outside of normal work hours.	100 percent of costs including books, tuition, and other fees. Must pass class with a C or better. Courses must be approved by the employee's supervisor and human resources and must relate to their current work or future work (as determined by human resources). Typically outside of normal working hours, but there are some exceptions.	Provides 100 percent of reimbursement for tuition, lab fees, books, and registration fees for postsecondary coursework. Costs associated with conferences and exams are not covered. If an employee leaves less than 12 months from the training they must reimburse the company the full amount, 75 percent for 13-18 months and 50 percent for 19-24 months. Employee must achieve a grade of B (3.0) or better or a "pass" for a non-graded course. Reimbursement is received after the costs are incurred and a proof of grade is received. Employees must submit a "Request for Tuition Reimbursement" with approval from their supervisor Must be approved in advance. Must not be on company time.
Is there a cap?	No cap.	No formal cap.	No cap.	$7,500 / year for undergraduate coursework and $12,500 for master's courses.	$5,250 / year for undergraduate coursework and $10,000 / year for a master's degree or above.

Note: data collected for this table was based on personal communications with employees or through the review of the employers personnel manual.

When management was asked why they offered these programs while there was some variance in their response, these programs appear to have been in existence for a long time. For example, one Vice President of Operations commented,

> It's just something we've always had. When we bought the company twenty something years ago it was in the handbook then and as a former elementary school teacher I never questioned not having it. Yea, I just don't think we ever didn't have it. I think there is always a benefit to formal education whether you're a machinist, a programmer, a customer service representative or a sales person. There's always things out there that can make you more effective in your job. I'm talking about more nice to know than need to know stuff and if you are motivated to go do it, here is some inventive from us.

This individual clearly values education having come from an education oriented profession, but simply promoting employee development and valuing development through education appear to be the primary motivation here. Another President at a second employer said simply, "Because I like people that want to learn. I don't care so much as to what it is, but I think it makes you a better human being." Again, human development, getting closer to reaching one's potential and valuing education appear to by the motivation here. A Controller at the firm stated, "If we were in a utopian society everyone would be learning all the time and while that's not possible, we want staff to know they can pursue knowledge if they want." When asked if he thought this program was a staff retention tool he laughed and responded by saying, "well HR might think that, but as a finance person I don't know if I see that. I think we just want to be able to show and tell our employees that we are willing to develop them." The Human Resources Manager of this firm was asked the same questions and she agreed that "this program is not so much a retention tool. I don't think I know of anyone who has stayed or left because we offer this support. I think it just a best practice thing." The basis for supporting tuition reimbursement appears to be grounded in staff development and

although employees do have the opportunity, whether or not it is actively promoted or encouraged by management is unclear. At a third firm, when asked why they have their tuition reimbursement program they commented, "…it's a mutual benefit. We don't give them any direct incentives other than the financial support. It's great, for them in the long-run because now you're eligible for other opportunities, but we don't really do anything in writing or guarantee anything." While this employer believes it is a of mutual benefit for upward mobility, they are cautious to provide employees with a defined career path. As discussed previously, in some cases degrees are required not only for technical and professional positions, but they may also be required for positions with leadership responsibilities. In those cases, despite a formal plan not being in place, having a degree does theoretically provide employees with more opportunity for advancement. When a Controller at the fourth employer was asked why she thinks her firm offers this program she said,

> I think it's hard to say it's one thing. It's a little of A and a little of B. I think it's just investing in your employees so that make sure than can.. That between the two of you, you can get the most out of your career. I think that's the most honest response. As far as on a scale of one to ten, the retaining people, I think it's a two or three. The program group is that kind of group that needs the most training and education, they're unique in that way that they need that kind of exposure, personally and professionally. They have this need to always want to know what's possible and what are the offerings this year. We want staff to be thinking of ways they can we employ something new. In all honesty, and I tell my staff this, this program [tuition reimbursement] is as much for you or it's more for you than it is for us [management]. If you want to make your way here to the management side, we can decently develop you and having more focused classes, like I said, that I hope I can put some people through a supervisory class that helps them become more able to work as a group and be just better at managing and directing and communicating. But getting advanced credentials will do a lot for you. But as far as what it does for us, my main thing is just, like me talking to you, having other exposure helps us to be better in the long run. Referring to an experience from a class or from a visit to a plant or from a unique event at a customer.

> All those things go into the memory banks and have influence at a later date. But when people do these things you can promote from within, you don't have to take the gamble from somebody on the outside. You have somebody that you can grow and invest in that will stay with the company and become the next Director or the next Executive Director, that's exactly what you want to do. It just develops people and we strive to be a good firm where people want to stay and tuition reimbursement is part of that.

This quote really details the complexity of separating the reasons why her firm supports tuition reimbursement. Increasing the speed at which an employee is able to reach their potential is one reason, as is retention, improving one's knowledge base, identifying unique solutions, being able to be promotable, and simply being at a place where people want to work. Although employers spoke very highly of their programs, very few eligible employees take advantage of these programs. Better understanding this side of the equation will be explored in the following findings section.

Implications for Employer Supported Tuition Reimbursement

In 2015, employers in the United States spent $177B on formal learning and talent development, but just 10 percent of that was used on tuition assistance to promote access to postsecondary degrees and credential completion (Carnevale, Strohl, & Gulish, 2015; Miller, 2014). One question this study sought to investigate was the prevalence of employer supported tuition reimbursement programs. Research on exact figures is not entirely clear with some data indicating that roughly 20 percent of students receive some financial assistance from their employer to attend school (Cappelli, 2004), while more recent data suggests that 60 percent of employers offer tuition reimbursement (EdAssist, 2016), and yet others suggest 85 percent offer some form of tuition reimbursement (WorldatWork, 2017). The variance in these figures is staggering and limited research considers the breakout for industry of region which is one way this study contributes to the emerging literature in this area. Previous research on manufacturing in the United

States reveals that postsecondary credential requirements are the third lowest among all industries (ahead of only retail and hospitality) with on 11 percent of workers holding any postsecondary credential (Renski, 2018). Considering that the demands for postsecondary education in manufacturing may be lower than that of other industries, it may be a reasonable to believe that employer support postsecondary support would be lower than other industries despite what is suggested by the present sample. This is merely an observation and is something that would require more robust research to support, but is a question worthy of future study. However, this data does indicate that more employers than the Lumina Foundation and others may have thought do appear to offer tuition reimbursement programs and that there are other barriers that are barriers present that reduce progress towards adult degree completion in Michigan.

Considering these findings within the context of the integrative deductive conceptual framework which includes six theories yields a set of valuable insights. Credentialist theory suggests that employers overemphasize certificates and degrees as a way of determining social status and in this context, employers shared very little to indicate postsecondary credentials were viewed through this lens. Furthermore, when employers were asked if they felt responsible for improving the rate of adult degree completion to provide a general benefit to the employee and society in general most employers indicated they did not feel it was their responsibility. The general tenants of signaling theory are also supported here because although employers do not actively support degree completion for transition or upward mobility for a large number of positions, nearly all employers did separate positions based on the educational requirement in part because of what that degree "signals" to them about the employee (or

the candidate) in terms of their knowledge, skills, and abilities. However, there were some cases where employers did actively support degree completion in order to promote employees into supervisory positions that did require a degree. Lastly, there is mixed support for human resource development theory because while all employers have some kind of tuition reimbursement program, four of which are well-articulated and formalized, most employers were clear that it was not their responsibilities to ensure staff reached their human potential through learning as a result of degree completion. Even though employers did not tout their role in supporting adult degree completion, as was established earlier, employers do believe performance can be enhanced through learning primarily as a result of on-the-job training or formal postsecondary programs.

Some educational foundations such as the Lumina Foundation have suggested that employers could be a source for promoting degree completion among adults without a college degree and those with some college and no degree. Inherent in this suggestion is that employers are either not doing enough now or are unwilling to support employees with aspirations to earn a postsecondary credentials (Lumina Foundation, 2016). Despite this claim and withholding the Lumina Foundation supported Cigna study, hard evidence of return on investment (ROI) for work-force development programs is scarce for both employees and employers (Lumina Foundation, 2015). However, from a cost and benefit standpoint, as has been established previous in this manuscript, employers are willing to support internal training and retrain some works if the corresponding costs are lower than the costs of external hiring. Employers even offer to support employee training in the form of tuition reimbursement, but not many employees take advantage of this opportunity. This is consistent with recent research on employer supported training which

indicates employers are willing to make substantial investments in worker training in order to satisfy their needs for qualified workers (Blatter, Muehlemann, Schenker & Wolter, 2015). In the case of degree completion, employers simply do not believe for most positions it is worth the investment to encourage employees to complete a degree, although the majority do offer and are proud of offering such programs.

The consideration for the ROI for employers is certainly something all employers consider as it is critical to supporting the needs of the business, some employers viewed the presence of tuition reimbursement programs as a form of an employee benefit. Employers were careful to suggest that tuition reimbursement programs result in more or better employees wanting to come work for them or result in employees staying, employers generally believed that such programs contribute to their employee value proposition. Tuition reimbursement as an employee benefit is not a recent consideration and is often associated with exemplary practices in the field of human resources (Hannay & Northam, 2000; Noe, Hollenbeck, Gerhart, & Wright, 2006). Employee value propositions have traditional been defined as a set of associations and offering provided by an organization in return for the skills, capabilities and experiences an employee bring to the organization. Other research identifies that an employee value proposition as an employee-centered approach that is aligned to existing, integrated workforce planning strategies which have been informed by existing employees and the external target audience to attract, retain and motivate the best candidates (Barrow & Mosley, 2005). A director of benefits for Willis Towers Watson, a global professional services and human resources consulting firm reported that with the job market tightening and a lack of qualified candidates for many technical and professional positions, employers have

started to expand their benefits offerings with tuition reimbursement being one option to help employers stand out for recruiting purposes (WorldatWork, 2017). While the "war for talent" continues to permeate all levels of openings inside and outside of manufacturing and beyond, employers will need to consider employee development and talent management in general, from a more holistic standpoint in order to support the ongoing needs of the business and the professional development needs of employees to remain successful in a global economy.

Research by Hora (2016) argues that the business community needs to be more invested in its employees and "for the skills infrastructure to function effectively throughout people's working lives, employers need to be more actively involved in supporting their employees' desire and need for learning throughout their working lives" (p. 143). The present study suggests that employers appear to provide employees with opportunities for training and development that are directly related to work and even offer credit reimbursement for employees to pursue additional education that could lead to a postsecondary credential. However, most employers are not willing to provide employees with one of their most valuable commodities – time to actually complete the coursework. Employers in this study were most likely to actively support training directly related to work that takes place within their facility suggesting that postsecondary institutions are either not capable of providing this training or do not offer the training needed. This may be one reason internal training is supported across all functions and occupations over postsecondary support. While it is wonderful that employers are taking the initiative to share the responsibly for skill related problems, something that Hora (2016) found a majority of employers in his study did not do, the overemphasis on skill

and workforce development undermines the notion of collective responsibility and public service as encapsulated by the traditional model of higher education. This ideology ultimately inhibits postsecondary institutions from preparing adults with the knowledge and skills necessary to not only be effective in the workplace, but also handle pressing social, political, economic, and environmental issues affecting the United States today, tomorrow, and into the future. Even though tuition reimbursement programs are offered, simply providing employees with this is not enough as very few employees actually pursue such opportunities. Employers reported that between one and fifteen percent of employees have or are currently taking advantage of the tuition reimbursement programs offered. The exact reasons for this will be explored in the following section, but Hora's suggestion that employers need to do more continues to ring true here as more encouragement from employers and structured career growth for employees appear to be meaningful factors that fail to be present.

In the present study, employers generally expressed ambivalence about supporting employee degree completion to improve the overall attainment rate in the State of Michigan. For example, one President / Owner said, "I just love my employees learning and if it leads to a degree, great, but if it just expands their knowledge, that's good too." Another Vice President of Operations commented, "Speaking of this, I really need to get [one specific employee] to complete that degree. She is just a few classes shy and it's something that would be good for her." But not all employers were as supportive. In a contrary example, another President / Owner noted, "What good does a degree do them here? If it helped them on the job I'm all for it, but I just see it as a cost with little benefit for most positions." This range of comments was a common occurrence among

individuals I spoke with. However, despite this general feeling of doubt about supporting degree completion, all the employers provided some form of tuition reimbursement with four of the five employers having formal programs that are accessible and available to all employees.

Employers were consistent in their desire to have employees who are pursuing postsecondary educational credentials or credits do so outside of normal or working hours. Previous research on adult education from the National Center of Educational Statistics' Adult Education Survey found that 53 percent of adult were receiving either tuition support or paid time off from work to pursue their studies (Hudson, 2001). While this was uncommon among this group of employers, it may be more common in other industries. In addition, data on the amount of employer tuition assistance is equivalent to about one-third of the average annual cost paid by post-secondary students which is close to what was shared by the group of employers in terms of the amount of financial support they offered (Cappelli, 2002). Previous research does support the theme that is presented here in that the most common form of employer sponsored assistance to support degree completion is financial (Cappelli, 2002). There was one employer who did say they were more flexible, but that may be in part due to the fact that some of their educational programs are recommended and required by the employer for advancement and without staff pursuing certain credentials those roles may go unfilled which would be extremely problematic for that employer. For this reason, the employer is likely willing to be more flexible, but this was the only exception uncovered in this study as it pertains to when employees are able to pursue postsecondary credits. When employers were probed further about their role in supporting adult degree completion they expressed general sentiments

that simply having programs was more than adequate, but went into a slew of reasons why employees have not been taking advantage of these tuition reimbursement programs. However, some employers acknowledge that a lack of formal career pathway or well-defined career pathway may not be motivating to some employees. Several commonalities among employers were present when detailing why staff do not complete postsecondary credentials which will be explored in the next research question.

Employer Perceived Barriers to Employee Credential Completion

The third and final findings section examines the question: What are employer perceptions of employee barriers to pursuing employer supported continuing education opportunities? To increase degree completion among the "some college" and no college adult population in Michigan educational foundations, postsecondary attainment workgroups, economic development leaders, and other higher education stakeholders have suggested employers could play a larger part in supporting adults complete degrees. While this is a relatively small sample, nearly all of the manufacturing firms included in this study do offer a formal tuition reimbursement program, but few employees pursue employer sponsored credentials. Michigan as a state finds itself in a precarious position in the with over 22 percent of adults having some college, but no degree and only 35 percent of citizens holding an associate's degree or higher which is 5 percent below the national average (Austin, 2015; Ruark, 2015). One important perspective to consider is what barriers employers see as preventing employees from completing degrees which will be explored in this section. Based on the data collected, two themes emerged from the interviews with employers: (1) Lack of employee participation is a result of individual characteristics or factors (i.e. motivation, work ethic, intellectual curiosity,

personal lives, position in life, and sense of entitlement) and (2) Education is simply not valued by adults who do not already have a degree which may speak to a larger or cultural phenomena.

Lack of Employee Participation in Tuition Reimbursement Programs is Multifaced

When employers were asked who typically participates or is encouraged to participate in continuing education programs employers responses tended to focus on a narrow description of motivated staff who differed from the majority of employees who were often described as "unmotivated, having a general lack of focus, no interest in gaining further knowledge, and mostly just a lazy satisfaction with where they are in life quite frankly" as one Controller put it. Employers held a rather negative and skeptical view of employees who do not consider taking advantage of continuing education programs. Table 2 below outlines the five employers included in this study and the approximate number of employees who enroll in postsecondary courses on an annual basis and the percentage of those who are working towards their first postsecondary (i.e. certificate, associates or bachelors) credential. Of those who are not working towards their first primary degree, some employees were just taking courses and others were working towards their masters. At the two largest employers most of the employees were using tuition reimbursement to work towards this master's degree. As is outlined here, a very small percentage of employees actually utilize these programs and only 25 to 50 percent of the employees enrolled in the programs are working towards completing an associate's or bachelor's degree. The pursuit and completion of "primary degrees" or the first postsecondary credential obtained by an individual without one is what workforce development and postsecondary education advocates argue for. To better understand

what is happening, employers were asked why so few employees take advantage of the tuition support offered by employers despite employing a workforce where the majority of staff do not have a postsecondary degree.

Table 2: Employee Participation in Employer Sponsored Reimbursement Programs

Employer	**Employer 1**	**Employer 2**	**Employer 3**	**Employer 4**	**Employer 5**
Number of Employees	160	90	55	20,000	15,000
Percentage of employees with postsecondary credentials	Less than 10 percent	10 percent	5-7 percent	10 – 15 percent	No more than 15 percent
Percentage of employees who take advantage	1-2 percent	No more than 5 percent	5-10 percent	3-5 percent	10-15 percent
Percentage who are working towards their first postsecondary degree	50 percent	25 percent	50 percent	35-40 percent	25 percent

Note: data collected for this table was based on personal communications with employees or through the review of the employers personnel manual.

A number of individual attributes or character traits were referenced by employers as the reasons why staff did not pursue employer supported tuition reimbursement. The most common reason referenced was a lack of motivation which separated employees who do pursue tuition reimbursement from those who do not. For example, one Owner / President said,

> For most of them it's the time commitment. They like the overtime because it's money in their pocket, but when it comes to going to school, even on the company's dime, that's something different. But again, it's all about their personal lives. And do as little as you can once you are hired. And they just, again, and there's a lot of talk of younger workers not really wanting to work. And to a great degree, that's the case. A lot of these people, I really believe during the financial crisis couldn't find jobs, so they quit looking. But now, they do want to be paid. They just don't want to have to work very hard for it and that extends to any personal development. And that's just the impression we get, the feedback we get. That's what I see here.

This Owner / President sees a general lack of motivation for personal development, a poor work ethic, a focus on short-term gains, and a general lack of interest in education.

When he was probed further and asked who tends to take advantage of the opportunity to take college classes or credits he responded,

> I admire people who want to learn. I don't really care what they're learning. I would prefer if it's related to something business wise. Even if they're out there in the welding department, and they're taking HR classes. I don't care. I don't care if we have openings for HR. I feel that the people who are willing to work their full-time jobs, and pursue, or broaden their spectrum of education, are higher quality workers. They're more dedicated workers. I hate to say it this way, but they're better people. They have higher aspirations. And if we can't accommodate them, they deserve, because of their dedication to be able to move on somewhere else. So, we, yes there are very few classes we rule out. Not very many. It's actually, we probably have five a year that will take it. And that's a lot. We've had years with none. Decades with none, really. And it's typically the same ones [employees].

This employer highlighted a number of commonalities identified by other employers regarding the characteristics that are shared among employees who do pursue a postsecondary education emphasizing continuous development, broadening their knowledge, and career development. This employer took the career development aspect on step further suggesting that if they are not able to accommodate or cultivate career growth for an employee he believes they should leave because he, as an employer he has failed the employee. More specifically, the concept of motivation was often brought up by employers and came up in the same way in nine of the interviews.

When the topic of who pursues or seeks approval to take postsecondary courses another President / Owner commented,

> I think it goes back to motivation. We just don't have highly motivated work force. Some people just happy. They've been with us a long time. They're happy being a welder, or being a group leader. You know, we have CAD people that are, they're the ones that are more likely to take classes. It has been a bit of a frustrating situation for me, that more people don't take advantage of it. It’s frustrating to me because I want people who have a passion for learning and self-improvement.

Multiple employers expressed frustration because so few employees pursued employer supported education. Employers were also in disbelief that the majority of their staff members were so satisfied with their current position or life that they thought additional education was not worthy of pursuit. Discuss the topic further one President / Owner comments indicated that he understands the significant time investment involved, when he said, “I understand it can be inconvenient for them to have to do it [take classes] at night. But LCC [(Lansing Community College)] offers a broad range of night classes that would be available to them around their work schedule.” Employers often referenced a lack of employee motivation in pursuing college courses while also acknowledging the difficulty of doing so. One General Manager said quite simply, “that the door is open and it's sad because they [employees] just don't ask about it. We have tried and nothing just ever happens.” As outlined in findings section one, not very many positions within the manufacturing firms require a postsecondary degree, but some employers still encourage employees to obtain an advanced education. When this General Manager was asked why she thought this was, she said, “I just think there is a general lack of initiative on employees. It’s just sad in that sense.” With the exception of one employer, all the employers in this study simply provide financial support, but it appears that this support is not enough to make a meaningful difference in motivating staff to pursue or complete a postsecondary credential. Even with the employer that is more flexible in offering staff time outside of work to complete postsecondary courses the percentage of employees who enroll does not appear to be different from those who require staff to take classes on their own time. This may suggest there are other overriding factors. Employers

referenced the employee's position in their career and the sacrifice that was required from a personal standpoint as additional barriers which will be reviewed in more detail next.

Mid to Late Career Employees are Satisfied with Their Status and Position

While a lack of employee motivation was the most commonly reference employee characteristic, the lack of willingness to make personal sacrifices to complete a degree was nearly equally as prevalent. One Vice President of Operations spoke to this directly when she said,

> Well, to work full time, and then go to school in your off time, there just aren't a lot of people who are able to do that. They have lives and families and some even have kids and they just have to really want it. Especially those that have been here a while. It requires a lot of sacrifice and it's tough to do that… There's a certain maturity that this person needs to have, and discipline. Right? It takes a lot of discipline because you've filled your work hours, and now you've got your after work hours. Arranging your classes, organizing your study time, and still having time for a life. I think for many people, they're comfortable with where they are. They're being paid well. They've got good benefits. It's just a small percentage of people who aspire beyond what's comfortable.

While this employer also referenced a lack of motivation, she specifically referred to the role of demands on adults outside the workplace. In addition to the pressure to satisfy demands outside the workplace, this employer identified position in one's career as another barrier. To better understand who does pursue postsecondary credits, this employer was asked if the employees who do pursue credits share any common characteristics. In response, she reported,

> First of all, I would say that they've been more seasoned people. Not people at the endish of their career though. Most are beyond their 20's. Maybe in their 30's. The people who do take advantage of our support are those that are maybe not feeling that they're getting ahead as quickly as they would like. That see that by getting a degree, and mind you, this is a pretty sophisticated thought process, that education outside of work, you know continuing to work full time, that that might be a good move for them to make to better themselves. The future benefits outweigh the sacrifice to make things better for their families. But again, this is a pretty

> advanced line of thinking that not many do and even less actually do it [pursue credits with employer supported reimbursement].

Again, this employer emphasized a willingness to make sacrifices of time and effort with the suggestion that the long-term benefit will be worth the investment. She also identified employees that are in between early and mid-career as those who are most likely to pursue postsecondary credentials and credentials. One Human Resources Manager voiced a similar perspective when she commented,

> At the hourly level there's just not a lot of people who want to move to the salary side. It's difficult to work and then go to school even part-time. At even at a part-time pace, a four year degree is really a six or seven year degree… I think that's the most challenging part of the fact that you still have to work full time and get those degrees. That's a lot of hours after work for a long time. It's just a long time horizon and most employees here are just happy with where they are at. We have a lot of staff who have been here a long time and they will say to me "what's the point?" I think there are people here who are really good at manufacturing and don't necessarily want that [a degree] or need it.

Not only is there a lack of employee motivation, but the time commitment is just too great for employees to invest the time for unknown benefits when employees are generally satisfied with their position within the company. Another Human Resources Manager was asked why employees do not pursue tuition reimbursement and she commented on her time at the plant and during her time in a corporate role when she said,

> From a plant perspective, it was just a few people here and there. Very few. Now that I'm in a more judicial type role, most people have their bachelor's degree. So I don't think there's many of them without it. And then almost everybody has their MBA or is getting their MBA. So I think there's been a lot of people taking advantage of getting their MBA. A lot of people get online MBAs for that. But at the plant level, probably all or almost all of our hourly staff don't have degrees. Most of them just don't care or even want it. They just don't have the ambitions to do anything different than what they're doing today. I think that's probably the bulk of it. I don't know what the actual percentage is but I would say close to 60 to 70 percent of our plant staff are retirement eligible. In the next 5 to 10 years we are going to have a big problem. But being so close to retirement, what's the point in getting the degree?

Again, while employers identify employees as lacking motivation to getting a degree, the satisfaction with their current role and the position of the employee in their career lifespan also appears to be a meaningful factors. With so many employees being close to retirement, it is not a surprise that so few are seeking a postsecondary degree at this stage in their career. A Controller at another firm communicated similar thoughts regarding employee position in their career when she said,

> There have been a handful of people in my department who have done it. Not really young and not real old. Just kind of mid-career. And some others, not in my department's are in like a weird middle aged or mid-career... I'll say middle aged because you have a couple people like fresh out of college that will come in to get a job who don't really do anything, and then you'll have me whose almost 35 who has done it, and then you'll have people in their 50s who are like "what's that gonna do for me? Are you gonna promote me?" It's really strange because the people in the 50s don't want to go and those that are in the middle of their career are looking to advance and want to get it over with as fast as possible. But the truth is, we just don't have many people that leave here so there is not a lot of mobility and people are generally petty have with the status quo. Once you are in, you stay for the most part.

Although employees who do not pursue degrees appear to be satisfied with the company and their position within the company, position in their overall career also influences who decides to pursue college credits. Multiple employers shared staff who did pursue postsecondary credits or credentials were "in the middle age range" according to one General Manager and another President / Owner comment that the staff are either "real young or in the middle of their career. Those that are in the 40s or 50s or so have no ambitions to do anything different." When the topic of advancement came up when discussing the purist of postsecondary credentials, employers were cautious to guarantee employees anything in terms of internal promotions. One Human Resources Manager even referenced a recent conversation with an employee, "Does it mean we are going to pay you more? No. Does it mean you are going to get a promotion? No. But it does mean

you are eligible for new things and you have bettered yourself which will hopefully help the company down the line which is the point." Although most employers were not this frank, this sentiment was expressed by nine of the employers interviewed. In addition to being satisfied with their current position and consideration for their overall career development employers found that employees tend to have a short-term focus when it comes to advancement. If there is not an immediate "payoff" in terms of a promotion or pay increase, staff were simply not interested.

Employees Emphasize Short-Term Gains

Employers referenced a lack of employee motivation, a lack of work ethic and intellectual curiosity, and satisfaction with their position in life and position as reasons employees do not pursue advanced credentials. Complimentary to these reasons is a short-term versus a long-term focus. Those who actively pursued the completion of courses and college credits typically focused on long-term benefits while those who did not were only interested in short-term gains according to the manufacturing employers. When a Production Supervisor was describing the difference between those who take advantage of employer sponsored continuing education from those who do not he reported,

> In all honesty, I tell them this is as much for them or more than it is for us. If you want to make your way here [to an exempt position], we can decently develop you and having more focused classes, like I said, that I hope I can put some people through a supervisory class that helps them become more able to work as a group and be just better at managing and directing and communicating. But as far as what it does for us, my main thing is just, like me talking to you, having other exposure helps us to be better in the long run. Referring to an experience from a class or from a visit to a plant or from a unique event at a customer. All those things go into the memory banks and have influence at a later date. But most staff here are just interested in the here and now. I'm often asked, "will I get promoted if I go to this class or will I get a pay increase?" And in most

> cases the answer is “no.” But there are some circumstances where learning an advanced or new part of the programming language for our CNC programmers is of value so we can pass that increase in value on to our staff. But for degrees, staff just can’t see why they would want that for the future.

Similar to the employer views on postsecondary education, if it is not directly relevant to the job or does not results in an immediate pay off for staff, employees are less inclined to pursue the degree or advanced education because of the time involved and lack of a clear and immediate benefit.

Other employers reported employees having a hard time “visualizing” their career beyond a few months. One Controller commented,

> I think that people get comfortable with where they're at. It's not that they're not growing in their position. I think that the idea that additional formal training, is it going to get me where I need to be? Like, I don’t think staff even know what that means. I think it it’s really hard for them to think about a career versus a job and education kinda plays into that. Because to think about wanting education you need to consider what it’s for and where you are going and most people are just not into that. They know what they need to do here and what they need to do this week and right now and that’s enough.

As mentioned previously, employers were guarded about discussing guaranteed promotions or pay increases for staff as a result of certificate or degree completion which is why staff themselves may have trouble determining what the long-term benefits are of completing a credential. The long-term benefits could extend beyond or outside of their current role or their current employer which may be one reason employers are anxious about having career development conversation and employees do not see the long-term benefits of pursuing and obtaining a postsecondary credential. In addition to considering the development of one’s career, employers mentioned most employees tend be focused on “the next pay check and that’s it” as one Human Resources Manager put it which may

also contribute to a short-term over a long-term focus. One General Manager articulated her perception of both the career development and pay component when she said,

> Most staff are just happy working. It doesn't really matter what it is or where it is. They just need to find a job to be in that pays. Whether they're parents, single adult or whatever, they are just looking to get a job that pays. They aren't really looking for a career per say. They are just working to have a paycheck at the end of the week or whatever it is... Going back to school is not even on their radar, much less how that connects with other jobs and a career.

As adults spend more time working they become less focused on how to grow or develop their career as much as they focus on simply holding a job that provides a stable income.

Another President / Owner viewed the lack of employee desire to get promoted immediately through the lens of entitlement. To support this position he said,

> It is amazing how many people want to be promoted into spots they don't have the training, or the education. These are the spots where they need education. They want to move up in the company, yet they aren't willing to make a personal sacrifice of time to get the associates degree, or to get a bachelors degree. Yes, they want to go from assembly to accounting, or to purchasing, but they just think that once they change positions they're going to know how to do the job somehow, that from being in a new office you know how to do things that you have no clue of, that you couldn't do before. For the people in those jobs or even the people that are qualified, they have already, at some point in their life taken the time to go to school and if they did that the would be eligible. But sadly, most aren't interesting in doing that but without fail, whenever one of those jobs opens up someone is in my office with a story of how they think they could do that job and we are not a charity and we don't just give out jobs… If you go to school, which we would support and down the line something could workout, but if you [the employee] don't take that first step you aren't just going to be handed a job because you asked or think you can do it. It takes time to get there…

Three other employers made similar comments and manufacturing employers are sensitive and knowledgeable about what positions in their organizations require a degree and which don't. More importantly, this comment clearly suggests that staff are interested in immediate upward mobility, but do not have the focus or interest in planning for their career from a long-term perspective. From a degree completion standpoint, employees

are resistant to invest the time and effort when there is not immediate benefit. Ironically, the emphasis on immediate and directly applicable benefits is something that both employers and employees have in common when is comes to postsecondary credential attainment.

When another President / Owner was asked why some employees pursue postsecondary credits and other do not, he said,

> They're just the ones that tend to think more long-term. They are not totally satisfied with their position in life… Again, it's just… I love people learning. And I feel that they make better employees. Those are the people I want to have working for me. Because they are the ones that want to make more of themselves. They want to be, I hate to say better than what they are, but that's why most people do, do something. They want to be in a financially better, or mentally better, they're driven. They tend to be the more driven people. If this has to be done after they work a full time job during their free time, they do it if they want the benefits that comes with it that they will be able to enjoy the rest of their working life. But the truth of the matter is, not many think this way. They are too caught up in other things that inhibit them from reaching their potential.

While it is difficult to measure the magnitude of these factors or even separate them because the barriers that make it difficult for manufacturing employees to complete or pursue a postsecondary degree are so intertwined, the notion or inability to find the long-term payoff of a degree valuable is significant. Although employers recognized that degrees are not required for the majority of their positions, they continue to promote and at least attempt to remove the financial barrier. However, there are a number of other barriers in place that, according to employers, result in such a small percentage of employees seeking college credits. Given the overlap in implications for this findings section and the next, instead of preparing a separate findings section for the two themes, implications have been grouped together in a single implications chapter after the next findings section.

Education is Not a Priority Among Adults Without a Postsecondary Degree

Although employers articulated and identified a number of specific barriers to postsecondary pursuit and completion, there was also a broader theme focusing on the culture or perception of education among manufacturing staff who do not have a college education. One Owner / President commented that education "simply not valued by this generation." When probed further and asked what he thought could be done differently he said,

> They needed to be raised differently. It gets back to work ethic. Again, it's that apparent lack motivation. They don't care about education and don't think much beyond the next pay check. Of course, you need to have a decent amount of intelligence to go to school, but they just don't care about it. They don't have to want to be brain surgeons by any means. For goodness sakes the educational reimbursement is reviewed with every employee on their first day. It's right in the handbook. It's one of the things that is reviewed by our HR person at the introductory meeting. They just don't care. Motivation in a lot of cases is more important than superior intellect, for what we need done. Education is a requirement for advancement and there is just a general lack of appreciation or value for higher learning among this group of staff. I don't think it has always been this way, but I feel like we have been trending in this direction for some time… There just seems to be a tremendous lack of motivation in this generation of the workforce.

This President / Owner believes that a lack of appreciation and value for advanced education starts with how someone it raised which is something that is supported by the literature (Cataldi, Bennett, Chen, & Simone, 2018). He also believes that a lack of value or appreciation for education is indicative of someone who lacks a strong work ethic and motivation. Despite this employer's observation that employees are aware of the educational and tuition reimbursement programs the company offers, he is surprised by the lack of staff engagement in this program. He also suggests this is not a problem unique to his company or industry, but is perhaps a trend that extends to this generation of employees. In general, he paints a picture of a workforce that has shown very little

interest in pursuing advanced educational credentials and some of this perception may be a result of growing up in a household that does not value or has not had the opportunity to pursue a college education. Five other employers referenced education upbringing as the root of the degree completion problem. One Human Resources Manager pointed to a "sense of entitlement" that results from valuing oneself over knowledge, skills, and abilities developed through advanced and continuing education. When asked why she thought this and what could be done to address this the Human Resources Manager commented,

> Yes, raise children differently. And I think we have to get rid of the entitlement attitude of this country. People have to be responsible for their own actions and that includes going to school or not. It's not society's fault if you're a failure. Society owes you nothing. But unfortunately these days, and the world of political correctness, nobody is responsible for their own actions. Everyone is entitled to everything. If a new job opens up the people that approach me about being considered are most often the ones that aren't even qualified. Then they get mad at HR because they aren't given the opportunity. Not anyone can be a Process or Quality Engineer. IF you don't have the education, you just can't do it. It doesn't mean you can't get the education and learn it, but people think they are deserving when they aren't. At least you would think that from listening to people talk. It's just such a pervasive problem with this generation of staff. Despite what you see in ads of people growing their careers and achieving advancement in manufacturing, people just think there are other ways to get promotions and granted, one day it used to be like that, but not anymore.

As other employers have stated, appreciating and valuing education from a young age is important as is an understanding or a belief that education is a gateway to advancement. It appears that many employees have ambitions that exceed their qualifications for positions, but lack the educational credentials. While this has been discussed previously, employees tend to be more short-term focused when it comes to career progression which may be on reason employees have a difficult time committing to such a long-term aspirations. Other employers discussed a lack of employee value or appreciation for

education early in their life does impact how staff view education now. One Human Resources Manager addressed this specifically when describing staff who do and do not pursue education,

> You've got to really want it. You've got to really want it. So why don't more people want it? A lot of our folks did not grow up in families where education was emphasized. So they just didn't think it was a possibility. It's just not on their radar. It's not a goal or anything. There wasn't an expectation for them to get a college degree. Even an associate's degree because their parents didn't have those degrees. Right? You know, those who grew up in a family where education was number one, those tend to be the people who continue forward. The same for those who didn't talk about it or don't have it. It's just embedded in who they are and what they value and I just don't see that changing.

Employers cited family upbringing and expectations around education as a child which influences how adults perceive, value, and prioritize education as adults. This appears to serve as a significant impediment to adult employee advancement and the adult degree completion agenda.

The lack of emphasis on postsecondary credentials for adults with work experience appears to be a problem embedded in their culture of these manufacturing employees according to their employers. As has been articulated previously in this manuscript, employers too struggle with the long term benefits of education. This sentiment was brought up by the manufacturing association Executive Director who noted,

> Manufacturing employers are starting to view talent from a long-term growth perspective. They are taking supply chain principles and applying it to their business. They are asking questions like, where do the good people come from, how do we sustain them, how can we strengthen their skill set? The employers and frankly the employees that are going to be successful in this day and age are those that are proactive with the learning. Unfortunately, in the state of Michigan, manufacturing hasn't always been an attractive option for the best and brightest… But now you are starting to see the "Go Pro" ads and the "Experience Sooner" campaigns which are trying to revamp how manufacturing is viewed, but

> this all connects. Most manufacturing employees just don't value education because it hasn't been valued in the industry, but again, I see that as starting to change and the employers and employees who don't do something are the ones who will be left behind.

Michigan as a state and manufacturing as an industry has supported a working culture that does not traditionally emphasize education. As Michigan finds itself in a position where older workers are trying to be incentivized and encouraged to attend school, this cultural problem that is ingrained so deeply in the industry serves as an impediment to progress both at the organizational and employee levels.

While education can serve as a launching pad for advancement, it is not a guarantee and in manufacturing, several participants reported that in the past, promotions or hires were based on nothing more than "yea, I know this guy and we should hire him. Or yea, they are doing a good job just bump em up" as one Production Supervisor put it. In this day and age where jobs are becoming more complex and organizations are more risk adverse, ensuring staff are qualified and capable is imperative. Education is one tool employers and human resource professionals use to ensure staff have the knowledge to be successful despite, according to one Controller, pressure from staff to simply,

> Put someone in a role because they feel they deserve it because they have been with the company or because they think they are persuasive or could learn it. That's just not how it works anymore and for a lot of those jobs you need an education and if you don't have that's a deal breaker. And yea, staff are unhappy about that, but just because you don't agree with it doesn't change anything.

Staff need to "change how they think, not the other way around" according to one Human Resources Manager. In order for the labor market and educational credential system to function more efficiently, it is important for there to be more transparency on behalf of both the employer on what they can offer in terms of upward mobility and the

educational provider in terms of what the training will provide them in terms of knowledge, skills, and abilities.

As an industry, manufacturing has not historically relied on employees with advanced educational credentials and that continues to be true based on the data presented here. In the state of Michigan where the presentence of unions was once strong and remains higher than in other regions, the emphasis on education and advancement through obtaining advanced credentials continues to remain low. Persistent union supported compensation structures that almost exclusively rely on tenure has contributed to the educational drought among experienced manufacturing adults in Michigan. Although none of the employers in this study were unionized, the culture remains. This was another perspective that was not lost on employers and also contributes to the industry culture as a whole that does not value education. One General Manager spoke to this directly when she said,

> I think education in the State of Michigan is just not honed in enough why it's important. It's just that kids are told these days that they have to do this and so they do it to check that off but they don't really understand why they're doing it. I think having that [an education] and looking at the end game what they're going to do after they obtain this, it's more than a piece of paper. It's more than another four years or six years or two years or whatever it is. They have to do something with it because otherwise it is just a piece of paper if they don't. We have a lot of staff here that just don't care about bettering themselves. Yea, they all want advancement, but for some of the jobs they want you don't just become an accountant after working in assembly. It's probably been done somewhere at some point in time, but that person he or she must have gone to school to do that, it doesn't just happen. I wish we had more staff here that wanted to go back to school, but the truth is we just don't. Most people in Michigan that have been working for 20 plus years are not going back to school under any circumstances. They just aren't. It's too much work for them and they are just going to stick with what they've been doing.

While it is unclear if this is something entirely unique to Michigan, employers did find that, particular among established employees there is a sense that trying to go back to get

a degree is too much effort and that the opportunity had already passed them by. A number of participants echoed similar statements even by stating, “education is just not a priority for most of our floor staff. They would benefit the most, but are the least likely to do anything” commented one Controller. When exploring this topic further, one President / Owner commented, “I mean, half the guys out on the floor can barely use a computer. Hell, I can barely use a computer and I run this place. These guys aren’t going back to school because it intimidates them, but also because they have no interest.” Although there were not many comments about perceived or gaps in ability to use computers, the perception that adults have no interest was articulated by nine of the participants interviewed. While finances are an often-cited barrier for adults to enroll in and complete and education, employers attempt to reduce that hurdle by sponsoring and supporting staff financially. One Human Resources Manager commented,

> I mean, not all companies have it [educational reimbursement], so I would say it's a priority, but it's also something when we're trying to sell the company that we offer. 'Cause a lot of people want to get that degree, they just don't want the loans, or they just can't afford it. So, it's a way for us to be like, "Hey, if money is your problem, we can help you out." Obviously, if time is the issue then we can't. I would say it's highly encouraged. Every employee we have will talk about those perks, especially people who want to know about advancement. I have had hourly people ask me, "How do I move up within in the company?" And then that's where we get, "Hey, well we have education reimbursement." But that’s usually where the conversation ends. I don’t know if it’s a lack of interest, or motivation, or something else, but not that many people take us up on it. I think it’s a pretty generous program, but staff show a lot of interest initially and then nothing happens.

While employers try to help employees by providing financial support, that alone is not enough to prompt more staff to enroll or pursue postsecondary credentials. While there are a multitude of reasons any employee may not elect to pursue postsecondary credentials, employers appear to offer generous continuous education support, but other,

more significant barriers impede employees from pursuing and completing advanced educational credentials.

Other employers described a “college or bust mentality” according to one Production Supervisor who further commented, “my staff were those people who said ‘college wasn’t for me then and isn’t for me now. I’m in my spot here, I know my job, I’m not really looking for something more.’ And they are totally ok with that.” One Human Resource Manager at a different organization expressed a similar comment when she said,

> I think that a lot of people don't want to go back ... in my particular area, a lot of people don't want to go back to school They might have tried it, they didn't you know, get it or whatever. Personally, myself, I did the college thing, it wasn't for me, and so here I am. And as much as [company name] wants to promote staff development and education it doesn’t make one bit of difference to me even if they'll pay me. I'm never going to go anywhere. I live less than two miles from work, you know what I mean? I'm not leaving [company name], I'm going to get there until they kick me out. And I know a lot of our staff feel the same way. It’s just not for everyone and that’s ok. For people now it’s more important, but for those of us who are mid to late career it’s like what’s the point? It’s too much effort to do even do it and then find another job. Who wants the hassle? People who did it do it and those that didn’t don’t miss it. That’s what I say.

A general lack of emphasis or value in education was expressed by some employers themselves in addition to sharing similar perceptions of staff. There also appear to be undertones of an us versus them mentality between those who went to college and those who did not which may further divide the two groups. A general lack of ambivalence and satisfaction were common responses from employers when describing the reasons or how and why non-degreed staff perceive continuing education. Some employers mentioned that “working in manufacturing we try to fight this ‘college is for everyone’ mantra” said one Controller. When one Plant Manager was asked how he tries to change the perception of education and manufacturing he recounted the following example,

> So every year I have staff who have kids who are graduating high school or even kids of my friends or my kids friends. I give out graduation cards and I give them $100. And at the bottom I say, "Get a job." That's what I say. I have sent out a ton of these things and the kids probably get it and think I'm joking because everybody tells you, "Graduate and go to college." Now just this past summer one kid wrote me back in his thank you, he goes, "I got a full-time job." And I'm like, "Ah!" He's working at a print shop. I'm sure that sucks. I'm sure he's gonna go to school eventually. He's gonna go local, but even in the next summer after you graduate, he went and he got a job. I just thought, "Ah, that was the highlight of my summer as far as graduations and stuff goes." That's the way to go. I think kids these days and frankly adults too, need to have that experience of working in some basic job to know what's out there with and without education. … Take an entry level job. Work in a lab processing stuff, doing data entry. Again, there's all these low-level positions that help to create a motivation to say, "You know what? I got some real desire here and I'm gonna try to do that," rather than never having the exposure to the less desirable or the lower level of the professional world. I just don't see how that works with one without the other. I went to school because I didn't want to do what I was doing for the rest of my life and it was going to be up to me to make it happen, not just because that's what our society says. All the crusty experienced staff out on the floor will say "yea college isn't for me," but my thing is how do you know? And with high school kids, how do you know what you want to do as a profession? You just don't. I wish more kids these days would take that entry level job to know what they don't know about working and what education can get you or where it can take you versus just going to school or dropping out and getting a job. That's what I think part of our problem here is, we have all these employees who think they are not "college capable" or "college ready" because they think it's all working or all college and then working, You need both, but most people here are already on the working path and don't see why they'd leave or change now.

This showcases the trend of education serving as a separator between classes, employees, and jobs. Furthermore, this example articulates how upon graduation from high school, individuals have a decision to make – enter the work force or pursue a college education. This Plant Manager argues that in fact, you need both work experience and education to be successful in this day and age, but most staff do not see it this way. He describes a systemic problem that starts with how employees value education from a young age and in what contexts. For most staff in manufacturing, they viewed themselves at that time as

either college educated and college bound or not. This Plant Manager also takes a slightly different approach compared to what we have previously reviewed as it relates to postsecondary degree completion and instead of focusing on individual factors, considers the broader scope of how higher education is viewed. The college completion agenda nationally and across the state are focused on promoting degree completion especially among working adults who do not have a degree and this perception suggests most of these adults have firmly made a decision against going back to school because they view college as a decision they made years ago and view it as an absolute that there is no turning back on. Further complicating the issue is the narrative that college should not and is not for everyone – which is central to this debate in the manufacturing sector. This broader consideration of higher education as "inaccessible or incompatible with the working class and those that get their hands dirty" as one Controller put it was an unfortunate and common theme that was shared across employers. For education in manufacturing to be valued, the perceptions and needs of employers and the employees themselves needs to change.

Lack of Employee Participation Implications

This research confirms research on adult continuing education and extends previous the knowledge base with an emphasis on manufacturing. Other research examining the percentage of adults who do pursue opportunities offered by employers to further their postsecondary education finds that on average, only five percent of employees participate in company tuition assistance programs (Mulhere, 2016). This finding is eerily similar to the data collected here where an average of 6.1 percent of employees participate in such programs. This would suggest that manufacturing and the

state of Michigan may not be unique in their low participation rate after all. The data and findings presented here also have implications for the teaching and learning literature.

Education and Experienced Adult Worker Implications

The teaching and learning literature identifies a number of characteristics of adult learners which include autonomy, independence, self-direction, require learning to be meaningful, and voluntary participation (Conlan, Grabowski, & Smith, 2003; Kerka, 2002). While adult learners themselves were not interviewed here, the employers did identify a number of individual characteristics that may influence adults learner decisions to enroll such as motivation, intellectual curiosity, general interest, and the time commitment. Adult learners are also more intentional and purposeful in their pursuit of knowledge and are not "passive receptacles of fixed knowledge," but instead, have the ability to pursue and interact with ideas that transform their thinking (Fuhrman, 1997, p. 90). The present research would support the characteristics that have been previously identified in the literature because reasons for adults not pursuing education often had to do with a lack of self-direction, disinterest, not viewing the learning as meaningful, and a general lack of desire to participate which would explain why they are not pursuing advanced credentials. For adults to consider and decide to pursue advanced educational credentials employers need to do more than just offer financial support. Flexible scheduling and an explanation of why certain jobs require education would help justify why degrees are required for some positions and not others. This may also help persuade some adults to reconsider the pursuit of a degree given the significant sacrifices required by the employee in order to justify doing so.

Meanwhile, the human capital literature posits that adult learners enroll in higher education to improve their earnings and employment outcomes (Becker, 2009). Literature from continuing professional education argues there is a positive correlation between human capital and productivity – for this reason, educational attainment is often prioritized to improve worker capital and organizational outcomes (Chatman, Polzer, Barsade & Neale, 1998). Despite this research and the inclusion as a component of the framework of this study, while employers do provide generous financial reimbursement programs to incentive employees, employers themselves appear to do very little to reinforce their claims of valuing education and "wishing more employees took them up on it." Education is often considered an investment in human capital considering the payoffs in terms of productivity and earnings (Becker, 2009; Bok, 2015; Spellings Commission, 2006). This would support the previously discussed notions that most jobs in education do not require a degree so from a return on investment standpoint, employers may not be able to justify the expense for all employees as there may not be a productivity return for employers once the education is completed by the employee. Adult students and learners, in general, are concerned about the economic outcomes of their degree and with increased emphasis on skill enhancement, learning, personal control, and career satisfaction (Becker, 2009). This may help explain why adults are so insistent about the immediacy of the rewards and their focus on short-term returns. This may be one reason adults have a difficult time and are frankly refusing to invest the time required to complete a degree to gain upward mobility. The time may simply not be worth the cost in terms of time required away from family and the investment in attending to work and attending classes.

In recent years, career transitions are more common than before as employees seek to gain knowledge, skills and abilities that are in demand (Tharenou, 2001). Despite this claim, it would appear that in manufacturing, for most mid to late career employees, the prospect of pursuing and education to change careers is especially daunting and employers have found most staff are quite satisfied with their roles and do not see why they would pursue additional education. Employers also believe that staff without a postsecondary education believe the opportunity has already passed them by and they have no interest in returning to school because their decision has already been made. Human capital theory has been criticized in the past for distilling human behavior into a simple cost benefit analysis because in reality, humans function to do more than just make money. The truth of this claim makes studying adult student motivation challenging (Tan, 2014), but the findings of this research do reinforce the belief the adult motivation for pursuing postsecondary credentials continues to be a major hurdle for non-credentialed employees.

Factors that Influence Adult Learner Enrollment

Despite the advantages of completing a postsecondary degree, there are several key factors that have been identified in the literature and have been supported by the research here which can serve as obstacles for adult students to attend school at the postsecondary level. Some of these factors the learner has little to no control over. One factor is parental level of education, which has been positively correlated with a learner's decision to enter and complete a postsecondary program (Engberg & Allen, 2011; Hoy, Christofides, & Cirello, 2001). Employers often described how an adult has been raised in terms of how education is valued, what level of education is expected, and how

education can benefit the employee as a major reason non-credentialed employees do not pursue postsecondary credentials. This also appears to directly contribute to a culture that is reluctant or at least skeptical about the benefits of postsecondary education. This has both explicit and implicit implications as increased parental level of education exposes children to more reading materials, cultural activities, an environment that values education, and positively impacts student retention (Thomas, 2002). Without this influence early in life or without some sort of meaningful experience later in life, adults who are raised without an emphasis on postsecondary education may continue to view education in a single dimensional way unaware of the scope of the benefits directly and indirectly related to employment. The distance to the school and length of commute time are also significant factors adult students take into consideration when deciding where to attend (Oreopoulos & Salvanes, 2011). While commute time was not mentioned directly here, time required to attend school was and continues to be a major impediment one that financial support cannot appear to compensate for the sacrifice required. Degrees are expensive and student debt, degree financing and affordability are often researched as they are also critical factors which impact adult learner enrollment decisions (Callender & Jackson, 2005; Thomas, 2002). While employers cannot afford to have staff attend school full time, they do offer enough financial support to theoretically support a student returning to school to complete a certificate in a year and a half to two years, an associate's degree in three to four years and a bachelor's degree in six to seven years. The results here suggest adults who are employed and have the opportunity to have their education paid for continue to enroll at a low rate due to a mix of other factors. Examples of other factors which have been identified in previous research include individual health,

family demands, and employment further complicate a learner's decision to enroll (Doll, Eslami, & Walters, 2013; Wintre & Yaffe, 2000). Manufacturing employers also identified family demands, position in one's life and career, lack of focus, time commitment, and a lack of value for postsecondary education as additional barriers or reasons why employees do not take advantage of employer supported continuing education. Another often cited barrier was employee motivation both intrinsic and extrinsic which will be explored in more detail next.

Intrinsic Motivation

Intrinsic motivation results from one's personal desire to fulfill their own needs and the rewards of doing so are internal (i.e., personal satisfaction or enjoyment in the task itself) (Andrews, Houston, & Bryant, 1981; Bellon, Bellon, & Handler, 1978). In the context of education, Ryan and Deci (2000) explain that learners who are intrinsically motivated are more content in their learning process, acquire knowledge in a coherent form, apply their knowledge more often than others, show higher academic achievement, and perceive themselves as more competent. Employer perceive employees as lacking intrinsic motivation as it relates to educational attainment which may be related to their position in the company, satisfaction with their life, or disinterest in disrupting their life's equilibrium as a result. Previous research supports this notion identifying factors such as wanting to provide more security for their children and wanting to complete a life goal as meaningful intrinsic motivators (Compton, Cox, & Laanan, 2006). Despite this research, not a single employer mentioned that wanting to set a good example for their children or future generations as a source of motivation to pursue a degree. However, employers did

identify the presence of a family and the time commitment require as major barriers for employees to overcome in the pursuit of a degree.

Extrinsic Motivation

Conversely, Simmons, Dewitte, and Lens (2004) characterize extrinsically motivated learners as more approach and avoidance ego-oriented, study with less regularity, show less excitement, persist less, use more surface level strategies, have lower achievement results, and are less interested in the course. According to human capital theory, extrinsic motivation suggests motivation depends on external rewards (i.e. praise, privileges, compensation, etc.) (Brophy, 1973). Many employers admitted having formal career pathways in place may serve as a motivator for some employees, citing that such programs would be difficult to implement because employers do not always know when positions will open up or when a need may arise and often operate in a just in time environment. Past research on adult learner motivation suggesting promotions, seeking new employment, and wishing to receive greater compensation have served as important motivators for mature students and without the existence of such programs, non-degreed adult learner achievement may continue to remain very low (Davies & Williams, 2001).

Lepper and Henderlong (2000) conducted a meta-analytic study of education and motivation and found the misuse of extrinsic rewards can undermine intrinsic motivation and ultimately, the effects of rewards on motivation are not entirely positive or negative. Instead, the impact of the reward is dependent upon the particulars of the situation. For example, Lepper and Henderlong (2000) identify timing, being informed, the larger context in which the reward is provided, and having control of the reward as factors that impact the effectiveness of rewards and motivation. They go on to claim more research is

needed to clarify the ways in which intrinsic and extrinsic motivation operate in real world contexts, which is a void this study may help address within the context of manufacturing in Michigan. Having a well-defined career pathway, clearly articulated timeframes, rewards for improvements in performance, and a strong understanding of what educational programs would best fit with employer and employee goals may help promote degree completion and attainment for non-degreed staff.

How to Improve Adult Employee Enrollment

Considering that the largest and growing group of workers in the State of Michigan is those ages 65 and older, identifying opportunities to engaged the workforce at all levels to replace these workers and grow with the economy is critical (Austin, 2015). While it is important for "traditional age" students to enroll in some form of postsecondary education, this alone will not be enough to meet the 2025 goal, as more adult students need to pursue or complete a degree to meet this attainment goal (Carnevale & Rose, 2011; Carnevale, Smith, & Strohl 2013; Merisotis, 2016). The three actors in this scenario – adult students, employers, and educational institutions themselves all bear some responsibility. One way to do so is emphasize the importance and value of certificates. In order for more adults to make the decision to pursue such opportunities, employers need to consider what their long-term human capital needs are and provide and outline promotional pathways focusing on career opportunities that will be available should the employee complete a postsecondary degree or certificate. The findings presented here also confirmed previous research which suggests that adults who enroll to pursue a postsecondary credentials are doing so for a variety of complex reasons, but are mainly related to future employment opportunities, education (personal

fulfillment), and family (setting a good example) (Compton, Cox, & Laanan, 2006; Rhijn, Lero, & Burke, 2016; Swain & Hammond, 2011). Both employers and employees want to see immediate returns on their financial, intellectual, and personal investments of time and certificates are the shortest path to doing so. With regards to educational institutions themselves, postsecondary institutions need to adapt to the changing needs of students, especially experienced adults and the mounting demands for accountability from both students and employers. Managing higher education costs and creating a transparent system of competency or skill building while meeting the needs of a larger and more diverse population of students requires significant attention from postsecondary institutions and future research initiatives. In order to support the future success for non-traditional students and improve degree completion in Michigan, all three actors must work in concert with one another which is exponentially difficult without the presence of a larger coordinating body. However, those who do find a way to make this system work for all three parties are going to enjoy the benefits of sustained success.

Conclusion

The goal of this paper was to offer an analysis of the underlying issues related to how manufacturing employers think about education and tuition reimbursement. This paper was not an attempt to prove or disprove the existence of a skills gap in Michigan. Despite calls for the "end" of higher education as we know it by titans of industry in Silicon Valley and others (Newman & Winston, 2016; Wastserman 2018; Weissman, 2017), manufacturing employers in Michigan still find value in the current educational system and did not identify or believe a suitable replacement existed. Furthermore, although some labor economists have argued that the need for advanced educational credentials has already surpassed what is held by a majority of the Michigan workforce, that does not appear to be the case here. In fact, manufacturing employers reported that entry level positions that do not require any advanced credentials and technical positions that require a certificate are the two types positions that were most difficult to fill. Manufacturing in the state of Michigan has proven to be more reactionary than anticipatory relative to their needs for an educated workforce. Most employers change their strategy only when business conditions obligate them to change course as has been the case with on-the job training. It was a pleasant surprise to see how many of the manufacturing employers do provide financial support for staff to pursue or complete a postsecondary credential.

Credentials – Employer Perceptions and the Future of Postsecondary Credentials

The traditional model of higher education is being challenged by demands for greater accountability among students, parents, policymakers, government, funding sources, and businesses to enroll more students and produce successful graduates with

employable skills. Over the past several decades, college leaders and policy makers have touted the individual benefits of a college degree such as the financial payoff in order to justify rising college costs (Carnevale, Rose, & Cheah, 2011). Despite the importance of career development, there are growing concerns among scholars and practitioners that such an emphasis detracts from the overall purpose and mission of higher education – to create well-rounded and prepared minds that benefit society (Blumenstyk, 2014; Fortino, 2014). The debate over the purpose of higher education ranging from contributing to the public good or providing students with "increased wealth and privilege for their own private gain" is debate that has continued from the 1800s and will likely continue as there is no clear end in sight (Hora, 2016, p.6). The findings articulated here support the notion that the purpose of college and postsecondary credentials lies somewhere between the aforementioned polar opposites – to teach both classical subjects and develop students that support and contribute to a more democratic society in addition to work related skills. This distinction was especially clear when employers were asked to describe their expectations and what they believed the purpose was of different postsecondary credentials.

As has been established in the literature, both the production and transfer of knowledge is a critical output of colleges and universities and is closely tied to the interests of the government, business, and industry as colleges and universities operate as market actors adapting to the educational needs of their environment (Sum & Jessop, 2012). Despite this importance, little has been documented regarding manufacturing employer perspectives on the value or purpose of different postsecondary credentials. Manufacturing employers were clear in how and why they valued particular credentials,

but were not optimistic on their future demands for well-educated staff. They believe that certificates and associates degrees certify and teach technical skills with associate degrees providing a bit more depth than a certificate. They also found bachelor's degree valuable for their position specific competencies such as expertise in accounting, information technology, accounting, finance, supply chain, and engineering in addition to their cultivation of soft skills and broad knowledge required for supervisory positions. Despite the emergence of new forms of credentials and a lack of reliance on workers with a four-year degree, manufacturing employers still value and find the current credentialing system has purpose and for the most part, fulfills their needs.

Manufacturing and Continuing Education in Michigan – What Now?

Adult learners are an increasingly large population in higher education and are increasingly concerned about the economic outcomes of their degree (Becker, 2009). These learners value skill enhancement, learning, personal control, and career satisfaction to ultimately gain the knowledge, skills, and abilities desired by employers (Tharenou, 2001). One potential option that would serve both adult students and employers well in the quest to improve adult completion is the adoption of an alternative learning process is the Prior Learning Assessment (PLA), which offers academic credit for knowledge acquired through work experiences (Klein, 2010). While institutions vary in how they evaluate PLA and award credit, the flexibility benefits are appealing to adult learners and employers alike because this type of curriculum transformation provides learners with opportunities to earn credit for working, decreases time to degree, improves workforce readiness, and reduces out of pocket expenditures (Romaniuk & Snart, 2000). Ultimately, the anticipated outcomes of adopting PLA in college and university curriculums is for

students to complete degrees faster, persist in completing their degree, graduate with less debt, and increase the likelihood of obtaining employment upon graduation (Compton, Cox, & Laanan, 2006). The development and implementation of PLA is considered an "essential practice," and has been successful in Florida, Indiana, Minnesota, New York, and Washington (Austin, 2015; CAEL, 2010; CRCC, 2016).

To improve degree completion among the experienced adult learning population in Michigan, PLA appears to be one solution that both employers and adult students could get behind. Despite this small sample, while employer willingness to invest in staff to complete a degree or certificate is encouraging, there is a concerning trend – simply offering tuition support is not enough to incentivize employees to return to school to complete a postsecondary credential. However, employers appear willing and interested in continuing to offer tuition reimbursement and the next step would be to better understand how to prompt non-credentialed manufacturing staff to harness these opportunities.

Previous research in higher education has documented the success of postsecondary educational pathways which build educational programs around specific occupations (Grubb, 2006; Jenkins & Cho, 2012; Rosenbaum, Stephan, & Rosenbaum, 2010). Formal postsecondary educational pathways align education with careers and typically include a combination of in classroom work and job training (i.e. internships, formalized training, etc.) where students ultimately concentrate in a field of study related to a specific career (Carnevale & Hanson, 2015). At community colleges, for example, educational pathways have proven successful and include whole-program schedules, required academic plans, progress tracking, identification of career outcomes, and

support student transfer from two-year to four-year programs (Bailey, 2014; Jenkins, 2014; Smith, Fink, & Fletcher, 2016). Adopting a postsecondary educational pathway model would require employers to outline the broad array knowledge, skills, and abilities and then work with postsecondary institutions to connect educational courses the desirable set of skills or knowledge required for employment in a specific position (Rosenbaum, Stephan, & Rosenbaum, 2010). This would likely be a challenge as most manufacturing employers interviewed for this study were concerned with the immediate needs of the here and now.

Another option similar to educational pathways is for employers to identify competencies for individual positions that are structured along a growth path of advancement. Such career progression matrices are not common, but would encourage staff to develop particular competencies in order to qualify for advanced positions. This structure would be similar to postsecondary educational pathways, but a career progression matrix would build the educational requirements around the needs of specific internal positions. The work of Hora (2016) ultimately argues the business community needs to become more committed to developing its internal talent and can do so by providing opportunities to employees within the organization, or by encouraging and supporting employees to acquire credentials and skills to advance their careers. This suggestion would be supported by a career progression matrix model. It would require employers to invest in the develop of current position descriptions and identify future needs related to education and skill development. Redesigning academic programs to focus on educational pathways would also provide adult students with a new level of transparency where they would be able to link their educational programs with workforce

outcomes such as potential salary and the availability of positions. Access to this information would enable adult students and employers to make more informed decisions about the cost-benefit analysis of investing in a particular degree or program of study. Determining the future competencies of a position may be asking a lot of employers who tend to think only in terms of immediate needs, but the adoption of this strategy would provide a form of human capital sustainability for both the workers and the organization while providing developmental opportunities that employees crave.

Garnering support from employers to support and invest in continuing education will likely continue to be an uphill battle. While employers are willing to invest in staff financially, the data collected here also suggests that employers are only willing to be advocates for additional training and education if it supports the needs of the business, is short-term in nature, and can be completed outside of work hours. In other states, progress has been made based on similar circumstances. For examples, in the state of Wisconsin, with environmental circumstances that are somewhat similar to Michigan, change has been fostered by emphasizing short-term skills training in science, technology, engineering, and mathematics (STEM) fields to introduce or re-introduce students to postsecondary education (Hora, 2016). Some argue that improving and strengthening the connections between educators and employers requires further revisions to the objectives of higher education which would need to include both public good and work based learning tenants (Cappelli, 2015; Grubb & Lazerson, 2009; Newfield, 2008; Newman, Couturier, & Scurry, 2010). One potential solution is reorganizing the courses and credits model to focus on short-term educational delivery.

This is something that both students and employers would find appealing because they are both interested in short-term gains that are directly related to work.

Overcoming Adult Completion Barriers in Michigan

The findings articulated here on barriers to employed adult learner enrollment and not necessarily unique and echo similar findings present elsewhere in the literature on adult learners. Lack of adult postsecondary pursuit has been associated with working full time, a general lack of motivation, challenges with balancing family and school, and an emphasis on short-term gains paint a clear picture of the barriers to adult degree completion. However, these findings reemphasize the presence of a more complicated cultural issue that has been identified by other Midwest research that has much to do with how (and where) someone was raised, their beliefs about employment and education, values instilled in them by role models and others, and general habits of the mind (Hora, 2016). This cultural phenomenon appears to supersede the problems present with educational pathways, opportunities for career advancement, and academic programming. The cultural barriers permeate the minds, behaviors, and habits of experienced Michigan manufacturing adults which implicates parents, teachers, employers, and the greater Michigan communities themselves.

Steps towards changing this perception requires effort on both the sides of employers and postsecondary institutions in the form of transparency. The lack of a clear credentialing system puts adult workers without a credential in a tough position with no clear direction when it comes making a decision about whether or not to pursue a postsecondary credential much less which one to get (Carnevale, 2018). Anthony Carnevale (2018) and Jamie Merisotis (2016) both argue the importance of not leaving

people behind and that more individuals need to graduate high school and take at least some part-time college classes. Otherwise, they claim once adults are into their career, they are unmotivated and lack the inclination to pursue postsecondary coursework which was a primary finding here (Carnevale, 2018; Merisotis, 2016). This requires more involvement from advisors at postsecondary institutions to keep up with advisees on career goals, making progress, and justifying the effort required while making the process and goals transparent and realistic.

Completing a postsecondary education has numerous benefits outside of personal economic gains. Swain and Hammond (2011) grouped the benefits of completing a postsecondary credential into four categories: professional, economic, personal, and social. The connection between level of postsecondary degree completion and individual economic benefit are the most well-known. Workers who have advanced educational credentials earn more, are less likely to be unemployed, are more likely to be promoted, have health and dental benefits, and have a sense of occupational prestige compared to their less educated counterparts (Belfield & Bailey, 2011; Broton, Goldrick-Rab, & Benson, 2016; Carnevale, Rose, & Cheah, 2011; Carnevale, Smith, & Strohl 2013; Oreopoulos & Salvanes, 2011;). There are also a number of societal benefits as college graduates tend to have healthier lifestyles, smoke less, live longer, are less likely to be obese, and are less likely to suffer from depression (Pascarella & Terenzini, 2005; Osterman, 2008). In addition, the completion of a postsecondary degree is found to be the single greatest factor in explaining differences in all forms of political activity from running for office, to attending a campus rally, to writing to a member of congress (Putnam, 2001). Society as a whole also benefits in that college educated graduates pay

more in taxes, are more likely to read literature, volunteer at higher rates, and are even more likely to wear seatbelts (Blumenstyk, 2014). Considering the many benefits of obtaining a postsecondary degree it appears as if the decision to attend higher education is an easy one; however, the decision for adult students is complex, especially when compared to their traditional counterparts (Osborne, Marks, & Turner, 2004). For all of these reasons mentioned and more, it is critical to finds ways to promote postsecondary attainment among all adults, but especially experienced adults who appear to be the least likely to enroll.

Response to Findings Inspired by the Unheard Adult Employees

The premise of this manuscript has clearly stated that focus of this study has been on manufacturing employer perceptions of credentials, employer sponsored education, and barriers to experienced adult credential pursuit. This paper has attempted to tackle, address, and better understand some of the most difficult, timely, and volatile questions in higher education and workforce development. Although the absence of employee interviews was intentional, the findings of this study have clear and direct implications for a large population of employees in the state of Michigan. For this reason, it is equally important to consider the findings from the perceptive of the employees themselves. To fill in the gap for data that was not collected for this study, I have turned to other sources of information that I was either unable to collect or would have trouble accessing. Since no actual employees were interviewed, a response to the findings has been prepared based on literature in Michigan and elsewhere that has spoken with working class adults in similar circumstances. In reviewing this information, I am going to highlight three

well-supported responses on behalf of the manufacturing adult learners, the state of Michigan, and higher education institutions.

Presence of Social Stereotypes

Many of the employers interviewed for this study were likely not familiar with entry level work nor of the fundamental challenges of poor and middle-class workers. For some workers, the secure employment they do have, depending on their circumstances, may be a substantial accomplishment. It is easy, and perhaps misleading for employers to debate questions of values, cognitive ability, and credentials of a group of people they share very little in common with. The pain these workers feel is for the most part invisible and according to David Brooks (2016) includes economic stress, ethic bigotry, and a loss of social status and self-worth. To better understand the role of education, employment, race and social class I turned to seven books, *Between the World and Me, Coming Up Short, Hillbilly Elegy, Strangers in Their Own Land, What you are Getting Wrong about Appalachia, White Trash,* and *White Working Class*. Together, these books provide a backdrop to better understand the motives, perspectives, and community of working class adults.

The manufacturing employers interviewed here made confident assertions regarding a lack of motivation on the part of their experienced manufacturing adult staff. Motivation is a complicated subject and it would be unwise to take these beliefs as gospel because the employees themselves were not interviewed. The perceived attitudes reported by the employers reflect national stereotypes of "on the floor" manufacturing staff – white, straight, middle-class, conservative, and protestant. This same group has garnered a great deal of interest recently after the most recent Presidential election. One often cited

example is J. D. Vance's *Hillbilly Elegy.* In his book, Vance offers a compelling and compassionate analysis of the white working having come from Middletown, Ohio a formerly prosperous steel town. He himself was raised where many children didn't finish high school and family values typically centered around family loyalty, physical toughness, strict religious standards, collective pride, and the love of one's country. When describing the labor market for working class adults, in *White Working Class*, Williams (2017) compares and contrasts the job market for the elites and the working class when she writes, "Professionals' national job markets mean that they often end up far away from their families, and family relationships…Family relationships [between elite professionals] typically involve emotional ties…and supporting one another by talking things through. Working class networks are narrow and deep, but professionals networks are broad but shallow" (p. 36). This example is telling especially in consideration of the case in Michigan because jobs have moved on to requiring more skills and training which the professionals (or elites) have adapted to, while the working class have failed to adjust and seem disinterested in redefining their working lives.

Advanced education, and education in general was seldomly described as a opportunity much less as an individual or family value. Vance even states, "There is no group of Americans more pessimistic than working-class Whites. Well over half of blacks, Latinos, and college-educated whites expect that their children will fare better economically than they have. Among working-class whites, only 44 percent share that expectation" (Vance, 2016, p. 253). He goes on to describe white-collar workers with contempt and awe talking about how these individuals never prepared a resume because they could rely on their college network and had parents who told them how to dress,

what to say, and how to network, which was a grand departure from the world he grew up in (Vance, 2016). As a college and Yale law school graduate, Mr. Vance beat the odds in his community and in his book, he argues that learned helplessness, not economic insecurity is what is responsible for the lack of advancement among the working class.

In Catte's (2018) *What you are Getting Wrong About Appalachia*, she details a culture that is in crisis because of the projected realities on the rural working class. The author builds on the perception that the problems of the working class is a among a group of people that are misunderstood, mischaracterized, and embody popular stereotypes about the poor and uneducated. Many of the common narratives that were expressed by employers in this study are that it is the fault of the employees that they are in the situation they are in working a minimum wage positions at a manufacturing plant. When in fact, many of these working class employees are likely perfectly happy doing the work the do, living where they live, having the education they have, and frankly, living the life they want. Catte (2018) highlights that there is a general failure among the social elites to understand and embrace middle class values and attitudes.

Catte (2018) argues that rural Americans do not necessarily need help or want to be reformed, they simply want to be left alone. The perception that this group of adults is perceived as powerless was especially revealing because many of the employers in the present study could not understand why these uneducated adults would not take their "free handout" for an education when this community of citizens is content with their current position in life and is not looking for a helping hand and to even extend one, could be interpreted as insulting. This incongruence with management ideals and working class realities showcases the failure of employers to deconstruct social stereotypes that

are clearly operating in our culture that benefit a group of people in power. Ultimately, Catte's work is a reminder that the fight over representation has significant implications concerning both cultural and political power. In this case, with employers "representing" the views of employees, it is important to keep that in mind. Working class adults face more unique and diverse challenges than ever before as it relates to employment and education, it is critical to be cognizant of the myths and narratives professed by employers as representative of a diverse group.

Employers were careful and did not articulate concerns over social class, but that does not mean that there are not social class implications present. Williams (2017) writes, "educational levels of not just reflect social class, they are constitutive of it" (p. 43). According to Williams (2017), social class based on career emerged in the 1950s when "students were separated based on ability where less affluent students and students of color were tracked into vocational programs that were seen as strictly second class" (p. 85). Williams goes on to suggest the professional elite have a prerequisite that allows them to reproduce their parents' class status while "working class kids worry they might end up with a first-class degree and still fail to get a job because they don't know the unwritten social codes of professional life" (p. 45). This was a common thread that was expressed in other books as well. Within the working class culture, higher education is considered as untrustworthy, ambiguous, and class prohibitive because working class kids "don't want to go to college to be 'pencil pushers'" (p. 49). A similar perspective was identified in Ta-Nehisi's *Between the World and Me* (2015). In this book, the author details an abbreviated life story focusing on the fear he felt growing up from authority and violence contrasted with the life of suburbia which is instead organized around

family get togethers, fireworks, and ice cream sundaes. In general, there was a mistrust of the "system" which included education and authority structures. Higher education was specifically described as a form of discomfort only serving to confirm the myths of American and its terribleness. With such strong feelings of mistrust, it is no surprise that children and even adults view the postsecondary system with a high degree of skepticism and the required pre-requisites to enroll make doing so a non-starter for many.

In addition to feeling distrustful of the higher education system, in *Strangers in Their Own Land,* Hochschild (2018), interviews 60 working class adults living in Louisiana. She finds that these adults have become so unfamiliar with the shifting moral qualifications of the American Dream that they have turned into "strangers in their own land" feeling resentful, displaced, and dismissed by others who were stepping ahead of them (Hochschild, 2018). While most of Hochschild's research interests center around better understanding self-identified tea party members and how they came to their views, she highlights a growing concern among this group of working class adults – they see their world changing where more women, minorities, and immigrants are able to achieve success (Hochschild, 2018). These self-described *strangers* fail to adapt to changing circumstances, desire to revert to days of the past, and wish things would stay the same were identified as common sentiments. However, when your community fails to evolve and in fact resents those who do adapt and achieve success, it is easy to see why this group of working class adults may feel resentful. In addition, the risk of becoming an outsider and adapting may feel so great to some, that it is easiest to just maintain the status quo and do nothing. A supporting perspective is also shared by Isenberg (2017) who also claims that class structure has remained rigid and inescapable for most of the

United States working class. When it comes to the topic of education, experienced adult workers have a perception that college professors brainwash the young and have nothing in common with the working class (Isenberg, 2017). While Isenberg (2017) suggests that class mobility is achievable, it is only done so by a lucky few and despite 400 years of historical research, she believes that a rigid class structure is still in place which often goes unacknowledged by the social elites in America. Of the employers interviewed for this study, not a single one mentioned "social class."

Lastly, the work of Jennifer Silva in *Coming Up Short* was reviewed. Silva interviewed a total of 100 working class men and women in Lowell, Massachusetts and Richmond Virginia. Her interviews portray a generation of workers who feel betrayed by high school guidance counselors, crippled by debt, and deceived by the very institutions (e.g. government and education) that they thought they could trust (Silva, 2013). Many of the interviewees come from families who once relied on employment in the manufacturing sector. In the interviews there were overarching themes of helplessness, uncertainty, and simply feeling lost in the working world. One interviewee, Diana even comments, "Everyone says you can't go anywhere unless you have a degree. I don't think I'm going to make it anywhere past Dunkin' when I am older and that scares me to say. It's not even enough to support me now" (Silva, 2013, p. 5). Silva's (2013) work reviews multiple accounts of working-class adults who are "caught in the teeth of a merciless job market and lacking the community support, skills, and knowledge necessary for success…" (p. 15). Particular attention is paid to the fragility of the American Dream in the 21st century where the working class adults feel "bewildered, disoriented, and powerless" in the current economy (Silva, 2013, p. 24).

When discussing postsecondary education specifically, one participant shared that they, "knew college was out of the question for me. I couldn't afford it, wasn't smart enough, didn't have the discipline to go, still don't (laughs). Yeah, that was that, college wasn't an option" (Silva, 2013, p. 24). With regards to higher education, Silva (2013) asserts that "while organizations such as higher education are expected to offer the possibility of social integration and upward mobility, unsuccessful interaction after unsuccessful interaction teach working-class youth to be distrustful and wary of the very institutions that shape their futures" (p. 29). For those of us who have gone through the higher education system and are well situated, it is difficult to imagine that there are individuals who do not feel that completing a degree would improve employment prospects and offer the possibility of a better life. Working class adults do not believe the completion of a degree is any sort of guarantee in terms of employment or other outcomes so it is simply avoided in favor of the realities they do trust – stable and immediate employment. The barriers the working class face when it comes to obtaining a postsecondary credential consist of a number of social, cultural, and bureaucratic challenges that employers, especially at the management level, cannot begin to relate to or espouse on behalf of their employees.

When it comes to higher education, working class adults can feel overwhelmed, vulnerable, and inadequate when attempting to make their way through an institution like higher education. This is further exasperated by the fact that many working class adults do not have a social support network to rely on. According to Silva (2013), while the working class does believe that education can be a path to upward mobility, lacking familiarity with the rules and structure without a guide leaves them at a serious

disadvantage. Furthermore, many working class adults do not see the "visibility of a well-worn path to translate a college degree into a professional job" Silva, 2013, p. 52). For this reason, and others mentioned here, it is no wonder many adults view themselves as unworthy of higher education and question if the benefits would exceed the costs.

The Situation in Michigan – Considering Educational Culture

It is difficult to study, examine, or use a broad brush to pain a state ethos or describe a state's culture as it relates to education. Wisconsin is a great example of this where a seemingly progressive state can be so conservative when it comes to education. Based on data that is accessible, it is important, given the implications of this study to examine Michigan's postsecondary educational culture. While multiple participants did acknowledge that Michigan is a state that has not traditionally valued and promoted education, data from third party sources also supports this notion. Michigan's historical reliance on automotive manufacturing is well known and much of this infrastructure is still in place today. This has fostered a culture that believed advanced education was for the most part, unnecessary or for the rich and privileged. After completing high school, many Michigan young adults accepted positions in manufacturing or at a manufacturing supplier that did not require a college degree. Presently, 14% of the Michigan workforce is employed in manufacturing (Gardner, 2018). In the past, securing manufacturing employment often meant joining the union and enjoying a middle class lifestyle for years to come. This standard and expectation is well ingrained and has contributed to a pervasive statewide culture that does not value postsecondary education.

For these reasons, it is not a surprise that over 22% of the Michigan workforce has "some college" but no degree and if Michigan's labor force maintains their current levels

of educational attainment, the deficit between human capital and skills required by employers, will continue to grow (Austin, 2015). From an attainment standpoint, only 35% of Michigan citizens hold an associate's degree or higher which is below the national average of 40% in conventional degree attainment (Austin, 2015). Michigan has over 221,000 adults ages 25-44 who lack a high school diploma or GED, yet less than 7% have enrolled in adult education since 2004 (Ruark, 2015). Middle skill occupations in Michigan and across the country requiring postsecondary education are expected to grow significantly over the next decade which will only serve to exacerbate the middle skill shortage (Barton, 2008; Bureau of Labor Statistics, 2013; Carnevale, Smith, & Strohl, 2010). Over the next five years 37% of job growth will be for middle skill workers and to support sustainable growth in Michigan, it is critical for community colleges to connect adults with training opportunities leading to postsecondary credentials and ultimately, career advancement (Achieve, 2012). This is especially troubling as middle skill positions make up about 49% of Michigan's positions and represent the largest share of future openings (Achieve, 2012; The Workforce Alliance, 2009).

Mack (2018) conducted a recent interview with a number of Michigan adults who were returning to school for the first time since high school. Unfortunately, this experience is all too common as millions of Michigan adults have had their postsecondary education interrupted a decade or more ago (if it even started) to never return. Mack (2018) found three predominant reasons that deter adult from attending college – the costs, lack of emotional preparedness, and the uncertainty surrounding a major or a career. One interviewee shared that she dropped out because her "priorities were not in line at all. On the first day, I had four classes and I skipped the last two"

(Mack, 2018). While a singular example, this was used to emphasize the absence of importance placed on postsecondary education and the lack emotional preparedness. Many students making the transition from high school to college simply weren't ready to handle the independence, did not know where to go for support, and did not see a clear connection between their coursework and a future career. While these findings are not unique compared to what has been established elsewhere in the literature, they highlight that these trends continue to persist in this present day in Michigan. The examples highlighted in Mack's (2018) article are more of exceptions than the rule as few adults make the decision to enroll (or reenroll) later in life. The findings are indicative of the hurdles adults face when seeking to complete a degree or certificate. For Michigan to become a state that has a well-educated workforce, it starts with making school affordable, adaptable to the schedules of working adults, transparent in terms of what types of careers the education prepares students for, and balances vocational training with 21st century liberal arts skills.

In another article, Gardner (2018) speaking specifically to the state of manufacturing says, "If you live in Michigan and still hold out hope that new factory jobs will bring high pay and middle-class benefits to the state, it's time to reset expectations." The administrator of the Kalamazoo Promise scholarship echoed these sentiments and was quoted as stating "there's too little understanding of the career that can be had with an associate's degree or certificate. That's an area where we really have to improve" (Mack, 2018). In terms of making immediate improvements, promoting a better understanding of careers associated with certificates and associate's degrees would be a natural place to start because they are short-term, less expensive than a bachelor's degree,

scheduling tends to be more flexible, are more technical in nature which means there is a more transparent connection between the education and careers, and are more adaptable to immediate market needs than a bachelor's degree. With other midwestern states such as Indiana and Wisconsin and already implementing workforce development programs to actively prepare and promote higher education among experienced adult workers, Michigan is already behind.

Higher Education's Response – A Valiant Effort

This manuscript features the backdrop of the "some college" problem and the high number of Michigan adults who have postsecondary credits but not a degree, while considering what might be done to address it. Michigan is a state that lags in national educational achievement with nearly two-thirds of the workforce lacking a postsecondary credential (Ruark, 2015). A 2016 report from the Michigan Association of State Universities states: "There is no better state strategy for increasing economic prosperity than increasing citizens' postsecondary education rates." Similarly, the goal of increasing attainment among Michigan's adult population is also shared by the Michigan College Access Network which touts initiatives focused on both high school students and experienced adults. Recent articles emphasize "good jobs in manufacturing" and state such positions require specific skills often accompanied by a certificate or an associate's degree, but such advertising is not prevalent enough, especially at the university level (Gardner, 2018).

The Adult College Completion Network has showcased states who have had success with specific initiatives and coordinating agencies that address problems related to adult postsecondary attainment. Michigan is one of a handful of states across the

country without such a coordinating agency and there is not an obvious provider. The Michigan Community College Association and the Michigan Association of State Universities are membership organizations that primarily focus on members, but there is one important exception – Michigan Colleges Online which is supported by the Michigan Community College Association. This resource provides students with information about online programs and courses offered at Michigan based postsecondary institutions. Michigan colleges and universities have also acted together to create a new agreement to facilitate the transfer of courses and credits with a focus on online coursework. The Michigan Career Pathways Alliance have launched "Going Pro" and "Michigan Manufacturing Day" efforts aimed at connecting high school students and graduates with advanced manufacturing training is two examples of coordinated efforts that have started to gain traction. Despite work by Michigan postsecondary institutions to create online programs (especially in the case of Central Michigan University which is a true leader), promote online courses (notably in the case of the Michigan Community College Association which has created new majors in technical and healthcare fields by putting together online courses offered at community colleges around the state), prepare new courses based on employer demands (especially true at the community college level), and improving the ease and rate at which courses and credits transfer between institutions, the progress towards attainment in Michigan has barely moved.

Response to Findings Summary

Looking just from the perspective of employers, degrees are only valued for specific positions, organizations justify costs based on the "needs of the business," education must be directly related to work (for the most part) to be supported, and the

majority of employers do offer some form of organization supported tuition reimbursement. Employers also shared they believe employees do not pursue postsecondary credentials because they lack motivation, are satisfied with mediocracy, are not willing to make personal sacrifices, and only invest their time and effort if there is an immediate benefit. Presented in this section were three contrasting responses showcasing the views of adults in Michigan, examining the statewide educational culture, and the ways in which educational institutions in Michigan have attempted to address the problem of degree completion. These employee based competing views offer a more complete picture of what is actually going on as opposed to relying exclusively on the employer data. In conjunction with the findings of the actual study, this information provides scholars and policymakers with detailed circumstantial evidence to consider when seeking to improve adult degree attainment in Michigan.

Final Thoughts

In place of training students for occupations, colleges and universities should teach students "higher order cognitive skills" to more adequately prepare them for middle skill occupations of the future (Newfield, 2016). Middle skill positions are typically the positions community colleges prepare students to accept upon graduation. Survey research on middle skill openings gathered data from employers who identified two types of training required for future positions – basic knowledge and applied skills (Casner-Lotto & Barrington, 2006). Basic knowledge consists of reading comprehension, mathematics, science, history, and economics (among others); while applied skills include critical thinking, oral and written communication, teamwork, creativity, lifelong learning, professionalism, and social responsibility (among others), which are

predominately liberal arts skills (Casner-Lotto & Barrington, 2006). Similar findings are also supported by the Association of American Colleges and Universities (2015), which found large disparities between student perceptions and employer expectations on qualities that are considered a hallmark of a liberal education with students lacking the liberal arts qualities desired by employers. In the midst of dramatic labor market changes and technological progress, developing both vocational and liberal arts skills is what will be required for the jobs of the future and postsecondary institutions will best serve adult learners by cultivating liberal arts knowledge, skills, and abilities in their students.

This research also has a number of meaningful and actionable implications for adult learners and higher education organizations ranging from recruitment of adult learners by higher education institutions to the career outcomes desired by adult students. Better understanding what previous research has identified as "learner desired outcomes" (Conlan, Grabowski, & Smith, 2003; Tagg, 2003) will only enhance the ways in which postsecondary programs respond to and support adult learners from a recruitment, student affairs, and career services standpoint. One of the primary reasons individuals choose to invest in an associate's degree or certificate is to improve career and occupation outcomes (Roksa & Levey, 2010). Incorporating ways to further support these goals supports student, intuition and potentially employer goals. The future of the workforce (not just in manufacturing) will increasingly rely on workers with some form of postsecondary education and over the next decade, jobs requiring a degree will grow twice as fast as those requiring no college experience (Carnevale & Rose, 2015). Thus, better understanding adult learner motivations and the relative magnitude of barriers will

assist in supporting adults to ensure they enroll, persist, graduate and are well prepared for the current world of work after they complete a postsecondary credential.

Jamie Merisotis, President and CEO of the Lumina Foundation, argues that we need to abandon the historic view that postsecondary credentials do not prepare people for jobs and instead higher education must prepare people with the skills they need to adapt as their lives change, jobs evolve, and new opportunities arise (Merisotis, 2015). This requires change on the side of educational institutions, but also on the sides of employers and the adult learners themselves. A recent article in the *New York Times* spoke to the overemphasis on the traditional college pathway both in terms of financial support, but also in terms of the overwhelming belief among parents, policymakers and others that college is the only path post-high school (Cass, 2018). The author goes on to argue that funding for vocational education should be more of a priority and for manufacturing employers in Michigan, that would be an excellent start as most of the high demand needs center around positions that require a vocational or technical certificate (Cass, 2018). An Executive Director of a Michigan based manufacturing associate commented, "the pendulum is swinging back towards emphasizing vocational career paths. I am seeing it with our members and we even just initiated a high school career pathway type of program where employers go into high schools, meet with, interview, and select high school sophomores to work for them for the summer with the intention of hiring them right out of high school. That is the future." Although this is not common now, both employers and the students themselves are adapting to the changing labor market. Although change is occurring at the transition point between high school and college, adults who are already employed remain the least likely to return to school.

This theme was present in the data here as manufacturing employers reported that most of the experienced adults with more than 15 years of work experience have no intentions or would even consider returning to school because the decision they made to enter the workforce over college was a terminal one. This population of adult learners is the most critical and difficult to reach and will require significant cooperation between employers and educational institutions to make progress without the presence of a state-wide coordinating body.

"The once and future worker is not the same person, nor did workers of the past do the same jobs in the same ways that those in the future will. But the role of the worker in society will remain fundamental and it is within our power to ensure its vitality" (Cass, 2018, p. 6). This quote highlights the critical implications of this work. While it is clear that the future of the workforce will rely on workers with some college education, what is unclear, is exactly what academic, technical, and employable skills are required from employers. As technology becomes more intertwined in the workplace, monotonous and procedural tasks are now being automated and a recent report estimates that 47 percent of all employment in the United States is susceptible to automation in the next ten years (Frey & Osborne, 2013). Additional research has investigated the capabilities of technology to replicate human talents and found that while some tasks can be replicated, perception, creative reasoning, social intelligence, and the application conceptual knowledge cannot easily be copied (Frey & Osborne, 2013; Levy & Murnane, 2012). As in-house employer training and colleges and universities attempt to prepare students to contribute in an increasingly complex labor market, the siloing of vocational skills is not

what is going to be required by the labor market in the future; instead, the future workforce will rely on workers with a balance of vocational and liberal arts training.

APPENDIX

Glossary

Competency: Refers to the ability or capability of an individual to perform a specific task or functions related to employment.

Continuing Education: A specific learning activity that is typically characterized by the issuance of a certificate, degree, or credits towards one of the aforementioned documents.

Credentialist Theory: Refers to an over-emphasis on certificates and degrees as a way of determining social status.

Credentials: A document proving a person's identity or qualifications" which also has historical roots. The etymology of "credential" traces its development from the Latin word "credent" – which means believing (Oxford English Dictionary, 2013). "Credent" comes from the verb "credere" and was often use as an adjective in the sense of giving credence to or recommending, which was frequently cited in letters or papers (Oxford English Dictionary, 2013).

Disruptive Innovation: First conceptualized by Bowers and Christensen's (1995) in their description of "disruptive technologies," disruptive innovation refers to the advancement of new technologies that create new markets and new demands. Applying this concept to employer support adult degree completion is potentially apropos, given that new communication technologies (e.g., the Internet, Web 2.0) have made "possible the emergence of new markets" while simultaneously revealing a pattern of unwillingness of mainstream customers "to use a disruptive product in applications they know and understand" (Bowers & Christensen, 1995, p. 45).

Fair Labor Standards Act (FLSA): According to Section 13(a)(1) of the FLSA 1938 which was amended in 2011 (FLSA, 2011), employees are exempt from both the minimum wage and overtime pay for employees who are employed in a bona fide Executive, Administrative, Professional, or Outside Sales capacity. In order to determine the exemption status of a job the position is evaluated against three criteria. The first is Salary Level – is the employee compensated on a salary basis at a rate greater than $455 per week **and** are they paid full salary for any week in which they perform any work? The second is Job Duties – is the employee's primary duty the performance of office or non-manual work directly related to the management or general business operations of the employer or the employer's customer? The final criteria is Discretion and Independent Judgement – Does the employee's primary duty include the exercise of discretion and independent judgment with respect to matters of significance?

Filtering Theory: Suggests higher education simply functions to screen applicants so that employers can make an informed estimate of employee potential productivity based upon the extent of their success in higher education.

Goal 2025: Work by the Lumina Foundation calls for 60 percent of Americans to hold a postsecondary degree (bachelor's, associate's, or certificate) by 2025 (Merisotis, 2016).

Human Capital Theory: Refers to the stock of knowledge, habits, social and personality attributes, including creativity, embodied in the ability to perform labor so as to produce economic value.

Human Resource Development Theory: Primarily concerned with people 's performance in workplace organizations and how those people can strive to reach their human potential and enhance their performance through learning.

Labor Market: The place where workers find paying work, employers find workers with the knowledge, skills, and abilities to do the work, and wages are determined.

Middle Skills: Jobs that require more than a high school diploma, but less than a four year degree.

Postsecondary (or advanced education): Education that takes place following the graduation from high school.

Resource Based View of the Firm: Views internal resources (i.e., employees) as the only source for a sustainable competitive advantage over competitors.

Signaling Theory: Higher education is used as a means of communicating certain desirable qualifications to employers so that they can reduce the degree of uncertainty present when making hiring decisions.

Skills Gap: The difference between the skills required for a job and the skills possessed by the employee (or what is available in the labor market).

Talent Management: The process through which organizations anticipate and meet their needs for talent in strategic jobs (Cappelli & Keller, 2017).

Introduction to Interviewee:
Hello _____. My name is Alex Gardner and I want to thank you for taking the time today to speak with me. I have been studying employer perceptions of credentials and am in the process of doing interviews with Michigan based employers, which will serve as the foundation for my dissertation. The purpose of this interview is to understand how you, an Owner or Leader of the Human Resources functional area, determine when and what forms of continuing adult employee education to support, up to and including degree completion. I am also interested in your perceptions of the ways in which employers should be responsible for preparing employees for their work and what you view as the broader purpose of credentials. My goal is to explore your lived experiences working in a human resources capacity to explore the relationship between employer perceptions, workforce readiness, and postsecondary educational credentials.

My target population is approximately 15 Owners or Leader of the Human Resources functional area. The interview should last no longer than 45 minutes to one hour. I will not use your name or any personal identifiers. If I believe I need to use a quote or phrase that will identify you, I will work with you on rephrasing the statement. Your privacy and confidentiality will be protected to the maximum extent allowable by law.

I will be making a few notes while you are talking and because I am unable to capture every word you say during the interview, I am requesting that I use a recorder. If you have any questions during the interview do not hesitate to ask me. Do you have any clarifying questions before we begin?

…

Ok. I am going to turn on the recorder now.

Introductory Questions

1. Tell me about the work that you do here?
    a. How did you get into this work?

       Possible Prompts

        i. Educational background
        ii. Experience in the field / industry
2. What background information can you provide regarding the type of work the organization does here?

Primary Research Questions

Employer Credential Perceptions

1. What types of education is needed for employees in your workforce?
    a. talk a bit about your hiring process?
        i. How do you ensure you hire the right people for your open positions?
2. What do you expect from someone who holds a postsecondary degree?
    a. In what ways does that differ for those with a certificate, associates, and bachelors?
    b. If so, in what ways?
3. What are the types of openings your organization struggles to fill?
    a. In your experience, what knowledge and skills are most in demand?
    b. How does or how has your organization addressed the talent gaps with positions that are especially challenging to fill?
4. How many employees do you have without a postsecondary degree?
    a. Can you talk about how you identify employees for promotional opportunities?
    b. What types of opportunities would be available if non-credentialed employees completed a degree?
    c. During your tenure here, how often have employees gained upward mobility within the organization as a result of obtaining advanced educational credentials?
5. What do you think is the purpose of a credential?

a. In what ways do you think having a credential is meaningful?
b. What do you think the value is of a postsecondary credential?

Employer Conditions for Continuing Education and Degree Completion

1. What are your organization's policies as they relate to employee training, tuition reimbursement, or professional development?
    a. Can you talk about the history of these policies?

    Possible Prompts

        i. What types of assistance do you provide?
        ii. How much training is provided to employees?
        iii. What factors does the organization consider when determining training needs?
        iv. How does your organization make a decision on when to support employee education?
        v. Emphasis on degree completion (why or why not)
        vi. How are employees selected for training?
2. In what ways do you think employees would benefit from furthering their formal education?

    Possible Prompts

        i. In what ways / for which positions / why?
        ii. How could your organization support employees pursuing and obtaining postsecondary certificates and credentials?
        iii. If not, what factors influence the decision whether or not to support these employees?

Employer Views on their Responsibility in Ensuring Employees are Successful

1. What types of knowledge, skills, and abilities do you look for in employees?
2. Describe to what extent your organization relies on postsecondary institutions to train employees for the work they do here?

    Possible Prompts

i. On day one, for jobs that require a postsecondary credential, what percentage of the job should the student be prepared to handle as a result of their educational preparation?
ii. How do you determine if employees or potential employees have this knowledge?
iii. Describe any experiences you have working with postsecondary institution's regarding pressing talent or employee educational needs?

Recruitment E-mail

Dear :

I am a doctoral candidate at Michigan State University in the Higher, Adult, and Lifelong Education program working on data collection for my dissertation. My dissertation focuses on employer perceptions of credentials and am in the process of doing interviews with Michigan based employers. I am hoping that you would be willing to meet with me for 60 minutes to share your experiences and perspectives on employer supported training, credential completion, the purpose of degrees, and how postsecondary programs do (or do not) prepare employees for employment at your organization. Is there a day or time that you would be available to meet?

If you have any concerns or questions about this study, please contact Alex Gardner by e-mail (gardn179@msu.edu) or by phone at 517-347-2445.

Thank you!
Alex Gardner, Doctoral Candidate

MSU Institutional Research reminder: Participation in this evaluation is completely voluntary. You have the right to say no. You may change your mind at any time and withdraw. You may choose not to answer specific questions or stop participating at any time. The interview should take about 60 minutes of your time to complete.

The collected interview data will be stored on a password protected computer. Only the researcher will have access to the data. Any identifiable information connected to you will be kept confidential to the maximum extent allowable by law.

If you have any concerns or questions about this study, please contact Alex Gardner by e-mail (gardn179@msu.edu) or by phone at 517-347-2445. If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 517-355-2180, Fax 517-432-4503, or e-mail irb@msu.edu or regular mail at 4000 Collins Rd, Suite 136, Lansing, MI 48910.

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