

2023

Relationship Between Employee Human Capital, Relational Capital, and Work Engagement

Royelle David Comer Sr.
Walden University

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Walden University

College of Management and Technology

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Royelle D. Comer Sr.

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Walden University
2023

Abstract

Relationship Between Employee Human Capital, Relational Capital, and Work

Engagement

by

Royelle D. Comer Sr.

MS, Troy University, 2000

BS, Alabama State University, 1987

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

January 2023

Abstract

Work engagement is a challenge for information technology leaders in the digital industry because employees with engagement concerns may exhibit decreased commitment and increased workplace incivility towards the organization, thereby impacting business profits. Grounded in the job demands-resource theory, the purpose of this quantitative correlational study was to examine the relationship between human capital, relational capital, and work engagement initiatives in technology companies in the United States. The participants were 125 supervisors and full-time personnel from the metropolitan region of Atlanta, Georgia, who completed an online-based survey. The results of the multiple linear regression were significant, $F(18, 106) = 9.27, p < .001, R^2 = 61.2$. In the final model, two predictors were significant, dedication ($t = 9.43, p = .03, \beta = 0.60$) and absorption ($t = 6.61, p = .03, \beta = 0.38$). A key recommendation is for technology leaders to engage employees by embracing a creative thinking environment, acknowledging employees' ideas, and providing supportive communication. The implications for positive social change include the potential to increase employee value, maximizing their capacity for achievement. Reducing negative work engagement in a digital economy, keeping skilled employees within small- to mid-size companies, and helping employees sustain high levels of engagement while increasing economic value.

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Dedication

I dedicate this achievement to all the people who influenced me throughout these years of sacrifice. First, to the glory of our Heavenly Father, for giving me the ability to sustain myself through this journey. To the memory of my mother and father, who taught me principles of hard work, persistence, and values instilled to give my best in every endeavor. I especially want to thank my wife, Terry, and my children, Rachel and Royelle Jr., for their unconditional love and support. To my brothers and sisters for their prayers and love. Completing this journey was challenging and one of the greatest rewards of my personal achievement.

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Section 1: Foundation of the Study

Work engagement has become a treasured principle for employers to compete within a digital economy. However, the approach to increasing work engagement within organizations continues to be a challenge. Organizational leaders who promote positive relationships among supervisors and subordinates refers to a strong psychological climate environment (Tian et al., 2022). Leader and member exchange (LMX) is a theory based on the idea that a leader's actions are different for each employee; therefore, communication is significant for building relationships, trust, and respect with subordinates (Schriesheim et al., 1999). LMX can positively contribute to employees' work engagement. Engaged employees commit to the work task and are focused on promoting their role performance (Chen et al., 2022). The authors research claimed that employees' perception of current work conditions and environment could serve as mediators with work relationships, as employees learn from a lack of supervisory support (Chen et al., 2022). High employee engagement is influenced by relational and human labor productivity (Reissova & Papay, 2021). The purpose of this quantitative correlational study was to examine the relationship, if any, between employee human capital, relational capital, and work engagement in a digital economy. The application of human capital management principles to an innovative business begins with a foundation of new ideas from creative thinking among leaders and employees (Witasari & Gustomo, 2020). Relational capital, which includes interfacing people to projects based on understanding who has existing solid relationships, helps to enhance work engagement and mediate patterns of turnover intentions (Buallay & Hamdan, 2019).

Background of the Problem

This study was a quantitative, correlational study addressing the relationships, if any, between the organization's human capital and the workforce work engagement. Due to the lack of scholarly attention toward the motivation of employee behavior, there is a need to understand the factors surrounding the outcome of work engagement interaction (DeBeer et al., 2021). The need to belong is a fundamental characteristic within all human beings woven deeply into the fabric for the individual purpose in society (Kennedy, 2021). Human resources management is an essential factor in promoting the employee voice, structuring the platform for individuals sharing their ideas with leaders (Wilkinson et al., 2018). Business leaders need to prepare for a new technological revolution impacting all sectors of the economy, including banks, trade, and services (Abdurakhmanova et al., 2020). Human capital is vital for the motivation of an engaged workforce to ensure competitive performance (Sawasdee et al., 2020). The importance of human capital management shapes the organizational structure with a focus on business practices and employee engagement to improve employee performance (Witasari & Gustomo, 2020).

Problem Statement

Actively disengaged workers within the workforce are increasingly spreading their unhappiness among their colleagues (Harter, 2020). The findings from a random sample of 34,557 full and part-time U.S. employees indicated that engaged to actively disengaged workers was 2.6 to 1 in 2020, down slightly from 2.7 to 1 in 2019 (Harter, 2020). The general business problem is that some leaders have little consideration for

employee engagement as a critical asset, leading to incivility in a knowledge-based economy. The specific business problem is that some leaders lack an understanding of the relationships between employee human capital, relational capital, and work engagement in a digital economy.

Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship, if any, between employee human capital, relational capital, and work engagement in a digital economy. The independent variables were employee human capital and relational capital. The dependent variables were components of work engagement: (a) vigor, (b) dedication, and (c) absorption. The targeted population consisted of technology managers and staff employees with companies located in the metropolitan area of Atlanta, Georgia, who had been in business for 5 years. The growth of human capital can contribute to positive social change. It expands an organization's potential by providing leaders with strategies to engage employees and bolster organizational commitment. However, redefining human capital from a value-creation perspective poses a challenge for corporate leaders to define value because the concept of human value represents much more than profits (Dumay, 2016). Employees enter a work role seeking frequent communication with their leaders for development and job opportunities.

Population and Sampling

This study's sampling was a targeted population of employees and managers who worked in innovative businesses within the information technology industry located in

the metropolitan area of Atlanta, Georgia. The G*Power analysis included identification of the sample size, a set of individuals (employees and managers). A requirement of 68 participants was necessary, consisting of employees and supervisors in the technology industry working in the digital economy. A power $(1-\beta) = 0.80$ selection was used to identify the 80 to 95% confidence levels for which sample size was determined.

Nature of the Study

Researchers can select three approaches to educational research: (a) quantitative research, (b) qualitative research, and (c) mixed methods research (Johnson & Christensen, 2019). In this study, I used a quantitative research methodology. Examining relationships between two or more variables typically requires larger sample sizes for quantitative research (Saunders et al., 2016). For this study, the quantitative research methodology was appropriate to examine relationships between organizational leaders, human capital, relational capital, and employee engagement. Qualitative researchers use nonreducible data delivered in a static text that requires interpretation through patterns and insights (Bansal et al., 2018).

Mixed methods research integrates elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for breadth and depth of understanding and corroboration (Creswell & Clark, 2017). My goal for this study was not to integrate qualitative and quantitative research approaches but to measure a relationship. Examining nonreducible data was not suitable for this study because the goal was not to understand the delivery of

static text or to interpret patterns and insights. Therefore, qualitative and mixed-methods were not appropriate for this study.

Appropriate quantitative research designs include correlational, experimental, and quasi-experimental (Wells et al., 2015). Selection included a correlational design for this study. A correlational design is an association between two or more variables that contribute to the prediction of another variable (Blanca et al., 2018). My goal was to measure the relationship, if any, between leader interaction, human capital, and employee engagement level; therefore, a quantitative correlational design was appropriate. Unlike experimental and quasi-experimental methods, there is no manipulation of variables in which findings establish prevalence (Curtis et al., 2016). The experimental design includes independent variables manipulated by the researcher (Sung et al., 2019). A quasi-experimental approach is similar to experimental research because of the manipulation of an independent variable (MacDonald et al., 2019). It differs from experimental research because there is no control group, no random selection, no random assignment, and no active manipulation (MacDonald et al., 2019). Because the study did not require manipulation of independent or random variables, experimental or quasi-experimental designs were not appropriate for this study.

Research Question

What is the relationship between employee human capital, relational capital, and work engagement in a digital economy?

Hypotheses

H_0 : There is no statistically significant relationship between employee human capital, relational capital, and employee engagement in a digital economy.

H_a : There is a statistically significant relationship between employee human capital, relational capital, and employee engagement in a digital economy.

Theoretical Framework

The theoretical framework selected for this study was the job demands-resources (JD-R) theory, developed by Demerouti et al. (2001). Bakker and Demerouti (2007) updated the JD-R theory to complement working conditions that monitor job stressors or motivation by two broad constructs: (a) job demands and (b) job resources. Bakker and Demerouti identified job demands as attributes requiring sustained physical and psychological effort, including the attributes emotionally demanding interactions, work pressure, and job resources as factors that influence working conditions to achieve goals or reduce job demands, including career development and autonomy. The concept of the JD-R theory is for the manager to influence interaction and design jobs that encourage collaboration and reward employees. In contrast, job burnout trends toward employee work concerns rather than employee job demands, and engaged workers will sustain to stay engaged (Bakker & Demerouti, 2007).

I anticipated that employee human capital and relational capitals play a role in job demands, job stressors, and how strategies apply within the JD-R theory. Researchers, such as Breevaart et al. (2014), ascribed to the belief that positive leadership enhances employee resources, increasing the employee engagement level in the workplace. Human

capital management application begins with a foundation of new ideas from creative thinking among leaders and employees to innovate businesses (Witasari & Gustomo, 2020). Relational capital, which includes interfacing people to projects based on understanding who has existing solid relationships, helps to enhance employee engagement and mediate patterns of turnover intentions (Buallay & Hamdan, 2019). Bakker and Demerouti (2017) hypothesized that worker commitment is a psychological state with physical vitality and enthusiasm immersed in employees' work activities. The JD-R theory can help researchers understand that a strong relationship between employee engagement and leader interaction positively influences work role performance (Sugandini et al., 2018). Thus, Bakker and Demerouti's JD-R theory was appropriate for this study because it provided insight into why the designations of human and relational capital are predictive in a digital economy and how it establishes a correlation to employee engagement.

Operational Definitions

Job burnout: An individual's withdrawal behavior from work due to long-term job demands resulting in excessive exhaustion (Bakker & Demerouti, 2007).

Kinesthetic learning: A cognitive mental connection explaining how the brain affects psychological emotions and human behavior (McGlynn & Kozlowski, 2017).

Meta-analytic: A sampling methodology about direct research practices in the form of a challenge or hindrance to job demands (Downes et al., 2020).

Organizational engagement: Shared perceptions of corporate members connecting with human nature, cognitively and emotionally invested in their work (Barrick et al., 2015).

Self-efficacy: The influence one must have to affect behaviors, thoughts, and emotions, producing a positive outcome (Chen, 2020).

Turnover intentions: An employee's willingness to leave an organization or a job due to the lack of management interaction (Manzoor et al., 2020).

Workplace incivility: A workplace representative of low morale produces rude, impolite, and disrespectful behaviors toward the organization and fellow employees (Saxena et al., 2019).

Workplace relationships: The interaction with peers and subordinates designed to develop overall employee morale (Roeder et al., 2020).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions are beliefs that scholars accept as true or sure to happen, without proof or factual support (Yang et al., 2018). My first assumption in this study was that participants from the data surveys would be unbiasedly ethical regarding relationship interactions among leaders and employee engagement within their organizations. The second assumption was that most employees and technical managers may not understand how to implement policies regarding the interaction of human capital and the future profitability it brings to the company.

Limitations

Researchers declare limitations as constraints on research that could influence the study (Osborne & Hammoud, 2017). The first limitation in this study was that the small sampling of technical managers and employees may not have reflected the potential weakness of relationships between employee engagement in other business populations because a metropolitan area with over 500,000 residents may not have represented suburban populations. A sample size of 68 through 107 using the G*Power analysis ($1-\beta = 0.80$) equation was appropriate for this study to identify the range between 80 to 95% confidence levels. The second limitation was nonparticipation because of the sensitive nature of beliefs (i.e., that some may not have wanted to participate based on their beliefs) and nonparticipation simply because some may not have wanted to participate. Because participation was voluntary, some employees and technical managers may not have wanted to participate or complete the survey, which could have affected participation.

Delimitations

Delimitations are boundaries and intentions developed to limit the scope of a study (Dafou, 2018). There were three delimitations for this quantitative correlational study. The first delimitation was the focal geographical area of metropolitan Atlanta, Georgia. The second delimitation was to survey the population of employees and technical managers at any one company. The third delimitation was the sample population of employees whose job function directly impacted technological advancement, development, and support in a digital economy.

Significance of the Study

Contribution to Business Practice

Organizational leaders face the challenge of gaining a competitive advantage within their industries. Therefore, corporate leaders seek to minimize employee turnover and maintain critical knowledge capital within their organizations (Harter, 2020). Organizations need employees with strong analytical and innovative skills that complement cognitive skills. This study is significant to business practice in that it may provide a practical model for understanding the intangible value of employee engagement. In the Western world, entrepreneurs' most influential work must create an environment that promotes employee engagement across a diverse culture (Gallup, 2017). The study's findings may contribute to the business practices for a digital economy manager to understand the influence employee engagement has on employee human capital and relational capital.

Implications for Social Change

This study may lead to positive social change with significant knowledge to advance employee involvement by employing intellectual capital variables. Employee empowerment is part of a broader social change process, characterized by the proliferation of digital markets, the shift toward an economy based on innovation, and the technology sector (Harter, 2020). Employee engagement is a leading cultural and organizational change shaping various industries, including education, health, and human services Organization for Economic Cooperation and Development (OECD, 2016).

Societal relationships may merit attention from private to public organizations, allowing employee engagement to reach individual potential and ensure societal benefits.

A Review of the Professional and Academic Literature

Scholars conduct a literature review to gain perspective on a specific topic; synthesize information; substantiate theoretical framework; and analyze research with relevant themes, models, and patterns from previous studies (Xiao & Watson, 2019). A literature review consists of critical analysis and synthesis of related topics and a review of other research results closely relevant to future evidence (Santos-Neto & Costa, 2019). The JD-R theory was the primary theoretical framework for this study. Therefore, the goal of this study was to examine research relevant to this theory as well as research relevant to contrasting theories, such as (Herzberg et al., 1959) motivation-hygiene theory and Burns (1978) transformational leadership theory.

Additionally, the study includes an examination of relevant research to the three variables outlined in this study: (a) the independent variable of human capital, (b) the independent variable of relational capital, and (c) the dependent variable of employee engagement. The employee human capital variable includes (a) employee knowledge, (b) self-efficacy, (c) personal education, and (d) professional experience. The relational capital independent variable includes (a) relationships; (b) partnership; and (c) alliances across organizational boundaries, enabling knowledge to spread with innovation. The employee engagement variable includes the topics of (a) interaction, (b) resilience, (c) confidence, and (d) the precept of mind to transform the workplace.

Strategies for Searching the Literature

This literature review is a result of a comprehensive search of the following academic databases accessed through the Walden University Library for journal articles: *ABI/INFORM*, *Academic Search Complete*, *Emerald Management Journals*, *ProQuest*, *Sage Premier*, and *ScholarWorks*. I used the Google Scholar search engine and the Walden University Portal to search for peer-reviewed articles, books, and governmental websites. The search for peer-reviewed articles included using the following keywords: *employee engagement*, *human capital*, *intellectual capital*, *job burnout*, *job demands-resources theory*, *job relationships*, *organizational engagement*, *relational capital*, *self-efficacy*, *turnover intentions*, and *workplace incivility*. The literature review includes sources published within 5 years of the anticipated completion date of this doctoral study (see Table 1).

Table 1

Frequency and Percentage of Resources Within the Literature Review

Resources	Within 5 years	Older than 5 years	Total	Percentage
Peer-reviewed articles	132	15	147	95%
Other resources	26	0	26	5%
Total	158	15	173	100%

Application to the Applied Business Problem

The purpose of this quantitative correlational study was to examine the relationship, if any, between employee human capital, relational capital, and employee engagement in a digital economy. This literature review involves the critical analysis and

synthesis of extant literature related to the themes, the theoretical framework, the independent variables, and the study's dependent variable. The focus of the study was employee engagement relationships in a digital economy.

Theoretical Framework

In this literature review, the goal was to examine Demerouti et al., (2001) JD-R theory as a theoretical framework for explaining work engagement. In this study, I compared the strengths and weaknesses of Bakker and Demerouti's JD-R theory and the alternative theories: (Herzberg et al., 1959) motivation-hygiene theory and Burns (1978) transformational leadership theory. The theoretical framework on job autonomy, social support, quality of the relationship with the technical manager, employees, and performance feedback supported the selection of Bakker and Demerouti's JD-R theory instead of alternative theories.

Demerouti et al., (2001) developed the JD-R theory by examining job stress and burnout. Employee burnout is a chronic syndrome from exhaustion symptoms, negative work attitude, and reduced self-efficacy that could occur in the workplace (Maslach et al., 2001). The JD-R model evolved into a theory as scholars revealed findings from both causal and reversed causal effects among job demands, resources, and well-being (Bakker & Demerouti, 2014). In the JD-R theory, Bakker and Demerouti outlined the transition from two unique processes to a theory regarding other interactions: job demands, resources, self-starting employee behaviors, and outcomes.

Since its inception, the JD-R model has been applied in numerous organizations and has inspired multiple empirical studies. The first JD-R model revealed self and

observer ratings of a particular work environment and put them into two broad categories: job demands and job resources (Demerouti et al., 2001). Bakker et al., (2002) realized that burnout impacted working people and described how organizations interact with the human resources department to create an engaging work culture by establishing job titles, descriptions, and training resources. Bakker and Demerouti (2017) introduced the JD-R model's cognitive functions to examine how job demands impact employee burnout. Job demands are physical, social, or psychological characteristics that require sustained mental or emotional efforts (Bakker & Demerouti, 2017). In contrast, job resource characteristics involve the individual functioning in achieving work goals by stimulating personal growth and learning development (Kulikowski & Orzechowski, 2018). For example, Hakanen et al. (2008) found that skill-level job resources, including craftsmanship, pride in the profession, and positive feedback, predicted personal initiative in work engagement over 3 years.

Since 2001, researchers have employed the JD-R model for continuous improvement measures for engaging employees when the job demands are high and the job resources are low, resulting in a person's performance (Bakker & Demerouti, 2017). Human burnout is a syndrome of emotional exhaustion, reducing inspiring genetics and resulting in depersonalization (Jackson & Maslach, 1982). Emotional exhaustion is an overwhelming feeling due to job demands, and depersonalization refers to an individual's mental detachment from their service or care and responding to this detachment with negative energy (Jackson & Maslach, 1982). Low self-esteem results in feelings of reduced professional efficacy and cynicism (i.e., disengagement) from work (Jackson &

Maslach, 1982). Dedication and purpose are dimensions of employee engagement that further evolve emotional disruptions into measurable categories of demands and resources.

Job demands refer to tangible, social, or structural aspects of the job requiring mental focus to specific costs. According to Hockey (1993), controlling one's human thoughts is a performance protection strategy to mobilize sympathetic activation for information processing. In response to demand stressors, strategy adjustments could narrow attention, reduce fatigue, and build relationships between exhaustion to demands and disengagement and resources (Bakker & Demerouti, 2017). Exhaustion may occur when the job demands have negatively influenced employee behavior due to the lack of management support and resources (Demerouti et al., 2001). The JD-R theory includes synthesis of the research literature to propose a multivariable model that examines how an acute job strain translates into job burnout (Bakker & de Vries, 2021).

In the JD-R theory, Demerouti et al., (2001) outlined how the relationship between the reduction of exhaustion and depersonalization can transform a negative job culture into a positive job environment, influencing individual engagement. Whereas job demands have been positively associated with emotional exhaustion, job resources have been negatively related to emotional exhaustion and depersonalization. The link between emotional exhaustion to depersonalization is present in both job demands and resources models (Park et al., 2021). Managers can address a negative job culture by embracing new ideas within the workforce to reduce exhaustion and depersonalization. The job resource function identifies work goals, reduces job demands, and stimulates personal

growth and development (Richter & Hacker, 1998). Organizational leaders who interact with employees to encourage individual performance influence an environment of decision-making and provide a solution of optional possibilities. Social interaction is essential to influence employee support systems that impact relationships with colleagues, family environment, and peer associations (Richter & Hacker, 1998). Due to lack of leader recognition of human capital, this study strengthens the void within these relationships, thus promoting a stronger workplace.

In the JD-R framework, the correlation between job demands and resources builds on occupations with high, medium, and low employment levels. Routine correlation for higher status or prestige occupations is often positive, while mundane jobs are emotionally harmful for the employee's motivation (Bakker & Demerouti, 2007). The JD-R theory defines how employee workload differs and strengthens the relationship between emotional demands under such conditions. Demerouti et al., (2010) stated that the best work environment is influenced by employee challenges created through job resources that facilitate work engagement. When employees are engaged, encouraged, and doing meaningful work, they are more likely to make the most of their talents and contribute to their communities and society.

Use of JD-R Among Researchers

Small group problem-solving and top management leadership makes job demands a challenge in lean companies (Abdallah et al., 2019). Researchers have supported applying the JD-R model in a lean context to address poor practices between small group problem-solving, top management/leadership, and employee participation (Abdallah et

al., 2019). Costa (2019) examined how coaching is a leadership style that helps employees explore new solutions within a lean context. The coaching style refers to management's commitment to floor presence and direct attention to occurring production problems. This approach suggests that employees use a bottom-up strategy to stimulate organizational improvement ideas (Bortolotti et al., 2015). However, the percentage of disengaged workers continues to increase due to the lack of engaging relationships.

Specifically, the job demands of nursing may be a concern for increased absenteeism, putting a strain on an understaffed workforce and resulting in decreasing patient care and satisfaction. Hernandez et al. (2018) used the JD-R model to examine excessive job demands and job satisfaction in the form of burnout ratio among health care employees, including nurses, analysts, executive leaders, and managers, in the Veterans Health Administration. Hernandez et al. characterized burnout by three dimensions: emotional exhaustion, depersonalization, and lack of personal accomplishment. Emotional exhaustion is the culmination of stress experienced by job demands. Exhaustion leads to increased absenteeism by putting an additional strain on the work staff and resulting in high turnover intentions (Bakker & Demerouti, 2017). Depersonalization is the need to detach the employee from work as individual behavior starts disengaging, while lack of personal accomplishment is a loss of self-efficacy resulting from a mixture of all dimensions of burnout.

Entrepreneurs may experience unique differences when coping with employee engagement and job demands. Dijkhuizen et al. (2016) explored how entrepreneurs' job demands correlated with work strain and successive pressure. The researchers focused

first on the psychological effect of the successive pressure rather than the business success of entrepreneurship. Using the JD-R model, Dijkhuizen et al. predicted that the high demands of a job with low resources would result in work-related strain. The implementation of innovativeness, appreciation, and positive organizational climate within the JD-R model boosted work engagement among employees (Bakker & Demerouti, 2011). They revealed that entrepreneurs would gain an advantage over competitors if they could balance the job demands and work perseverance.

Kulikowski and Orzechowski (2018) tested the JD-R theory among employees with either high or low cognitive functioning by concentrating on two crucial human mental characteristics: fluid intelligence and working memory capacity. Fluid intelligence employability solves novel problems by thinking through situations that offer no new knowledge toward any solutions. Working memory capacity is responsible for processing, updating, maintaining, and storing information in short-term memory. The cultural gap of employee knowledge represents a core construct in the training of human cognitive functioning. The employee's mental functioning factor was the best predictor of job performance and a negative predictor of counterproductive work behavior (Kulikowski & Orzechowski, 2018). Respondents to cognitive-behavioral interventions have used the JD-R model aimed at enhancing coping skills, social support, and relaxation (Bakker & de Vries, 2021). The results related to cognitive functioning showed a correlation between an employee's job characteristics and their well-being.

Moreover, teachers who have a positive relationship with administrators and students may feel more confident within their profession. Skaalvik and Skaalvik (2018),

examined the job demands and the impact of teachers' work on professional development and disruptive student behavior. Skaalvik and Skaalvik (2018), researched how job demands and resources are interrelated, given that barriers to professional development may infringe on the teacher's ability to engage students and manage the environment effectively. Teachers experience behavioral challenges when engaging students with low esteem in high interactive climates (Skaalvik and Skaalvik, 2018). Bakker and Demerouti (2007) reported study findings among teachers that job resources acted as buffers diminishing negative relationships between peer misbehavior and work engagement. Variable-centered factors, including nature, knowledge, and association, revealed a progressive mix of demands and resources for teacher support success.

Contrasting Theories

In the following subsections, I examine theories not selected as the theoretical framework for my study. The current study focus was on the relationship between employee human capital, relational capital, and employee engagement. In presenting contrasting theories, addressed are Herzberg et al., (1959) motivation-hygiene theory and Burns (1978) transformational leadership theory.

Herzberg's Motivation-Hygiene Theory

Herzberg et al., (1959) the motivation-hygiene theory outlines the attributes relating to job satisfaction and job dissatisfaction when mediating culture regarding an employee's work environment. Alrawahi et al. (2020) used a positive and negative scale based on Herzberg's two-factor motivation-hygiene theory to measure teachers' motivation at the secondary level. In addition, Han and Yin (2016) recognized motivation

as energy or drive to individual action, giving people reason to sustain and pursue an activity. The two-factor motivation-hygiene theory is an example of job satisfaction when referring to the scale of administration, achievement, pay, career advancement, and interpersonal relations. Moreover, Chu and Kuo (2015) conducted a study testing Herzberg's two-factor motivation-hygiene theory in an educational setting to determine the impact of motivation and hygiene factors. Furthermore, Alfayad and Arif (2017) used Herzberg's two-factor motivation-hygiene theory to explain the relationship between the workers' voice and employees' motivation to determine job satisfaction in the workplace. Alfayad and Arif concluded that Herzberg's two-factor motivation-hygiene theory validity of turnover intent was due to lack of hygiene factors, such as compensation, which negatively influences on job satisfaction but is not a link to engagement. The workforce is ready for engaging ideas and innovation when leadership seeks out their potential.

Holliman and Daniels (2018) examined how higher education administrators and faculty leaders should consider honesty and complete disclosure while maintaining employee trust and motivation with colleagues. The researchers collaborated with professional higher education associations to gain organizational transparency, confidence, and inspiration. Using the Herzberg et al., (1959) motivation-hygiene model, Holliman and Daniels found that cultural morale was important to employee financial concerns and job satisfaction. Such cultural relationships reveal how job satisfaction among employees act as motivation rather than the institutional financial problem (Lipka, 2018). When Herzberg's motivation-hygiene theory is applied, the organization's

administration and policy identify factors relevant to interpersonal relationships and work environment (Holliman & Daniels, 2018). Holliman and Daniels recommended more responsive measures of the factors influencing job motivation or satisfaction. In this study, I emphasized the importance of relational capital interaction among leaders and employees.

Burns' Transformational Leadership Theory

Leaders display attitudes and behaviors that help transcend change and create a mental transformation among employees and leadership. Schaubroeck et al. (2020) found strong support for the influence of transformational leadership for (a) internalizing personal value and (b) self-efficacy for followers' performance. Burns' transformational leadership theory predicts mediated relationships between follower behavioral intentions and explanatory leadership (Groves, 2020). As transformational leadership focuses on followers' behaviors, their work attitudes guide the shaping of organizational goals.

Leaders face employee engagement challenges of understanding individual strengths and weaknesses to lead. Andersen (2018) utilized transformational leadership theory, categorizing their strengths and weaknesses as contextual related to effectiveness within an environment. The context and leadership must coexist to gain maximum results within a dynamic environment of constant technological change. A formal approach to the innovative leadership context operates within a framework to include processes, systems, environment, departments, and organizations. Transformational leadership is a transforming theory of business change by referring to the leader's state of mind, the company's vision, insight, and understanding of the organization's goals and mission

(Sheshi & Kercini, 2017). A leader is not just someone who yields power but appeals to the values of their subordinates (Burns, 1978).

Human Capital

The United States continues to transition to a digital economy with ideas that advance the trajectory of human capital. Abdurakhmanova et al. (2020) stated that according to the United Nations (UN), more than 33% of the world's population lack intellectual development due to coherent starvation, resulting in low learning standards within the workforce. Scientists in the United States analyzed 3,100 technology jobs based on education rate, labor productivity, and increased human capital investment resulting in a high rate of return through education of technology and innovation (Abdurakhmanova et al., 2020). Human capital a scientific and technological form with revolutionary changes transforming society in a natural way (Zaborovskaia et al., 2020). Human knowledge and intellect within an organization are crucial human capital indicators.

The Impact of Human Capital Management

Health organizations utilize human capital to sustain competitive advantages and achieve profitability. The World Health Organization (WHO) (2018) forecasted that the need for the nursing workforce will grow 30% by 2030 (as cited in Lee et al., 2018). Management of human capital requires investing in job design, building a culture, and adding knowledge sharing as a critical driver to employee engagement (Lee et al., 2018). Engaged employees help organizations in times of progress, challenges, and downturns (Lee et al., 2018). Greater utilization of human capital within organizations will improve

the work environment. Human capital is a crucial investment to organizational leaders and employees for sustaining talent and profitability. Some leaders lack an understanding of the relationships between employee human capital and misuse of its value with their organizations.

Human capital within the health care industry relies tremendously upon nurses as frontline professionals, a position requiring a high degree of employee engagement. Lee et al. (2018) referenced the Magnet Recognition Program as the gold standard for evaluating nursing engagement. In this program, the selected council utilizes a quality care model as the theoretical framework to survey how nurses engage with the organization's mission, core values, and caring practices. Nursing procedures that apply employee engagement practices reveal positive interaction with staff and management interactions at all levels (Lee et al., 2018). Human capital management practices (HCMP) help professionals develop systems and policies impacting behavior, performance, and employee's attitudes (Witasari & Gustomo, 2020). Organizations that invest in human capital are transforming the industry for frontline professionals.

A transforming workforce builds upon one generation to the next. The nursing workforce is multigenerational, including Baby Boomers, Generation X, and Generation Y (i.e., millennials). Each generation inherits its own set of values, attitudes, and expectations from leaders within the workplace (Lee et al., 2018). Lee et al.'s (2018) findings revealed that millennial employees are not open to mentorship from the older generation, and Generation X remains frustrated with Millennials because of their work ethic. Fostering a relationship among the different generations promotes cultural

awareness, teamwork, and collaboration. Leadership succession is currently inadequate among nurses, considering 70% of nurses' administrative hierarchies do not have a succession plan, and 38% of programs only focus on top-tier executives (Lee et al., 2018). Digital technologies to include cloud computing, artificial intelligence, and biotechnology is transforming the multigenerational culture into how new business will function (D'Souza & Williams, 2017). Strategic succession plans include vision, allocation, mentoring, and coaching.

Human Capital Management Effect

Innovation requires an element of self-efficacy when operating in a competitive environment and sustains itself through human capital management. The best human capital management practices promote behavior with employees' skills, performance, and attitudes achieving corporate goals (Witasari & Gustomo, 2020). From a psychological state of mind, human capital management is a manager/practitioner position of confidence, hope, optimism, and resiliency (Abdurakhmanova et al., 2020). Witasari and Gustomo (2020) determined that employee performance increased 8% (64.1% to 72.9%) in the human capital management environment. The application of human capital management principles to an innovative business begins with a foundation of new ideas from creative thinking among leaders and employees. This study may show a need for collaboration with employees making the most of their talents maximizing productivity in their organizations.

Educational training programs must be readily available to increase human capital management in professional and service fields and encourage individuals to visualize

lengthy careers. Human capital management can influence an employees' psychological state of low esteem who are motivationally strained and feel that they have little social support or emotional help will likely not engage in work or even quit. Banalieva and Dhanaraj (2019) compared employees' engagement levels working in the architectural and construction fields. Participants in advanced educational training programs, such as the architectural field, had a more significant engagement level of learning and understanding the coursework than high school graduates in the construction field. A further degree of proficiency among age groups between 30–40 years of age can increase through advanced training programs (Banalieva & Dhanaraj, 2019). The most effective public investment is the training of the population with innovation, science, and education (Vertakova et al., 2019). Educational training programs can enhance individual careers with human capital management.

Impact of Digitalization on the Formation of Human Capital

Human capital is a resource becoming more competitive in developing the technology industry and formalizing a digital economy. State statistics from the Russian Federation address digitalization factors regarding the statistical index on human capital (Zaborovskaia et al., 2020). Zaborovskaia et al., (2020) stated the human capital index reflects 82 geographical regions and 34 digital factors that characterize and demonstrate the trend toward a digital economy within Russia from 2014–2018. A digital economy references a system of economics based on the speed of information through technological communication. The Russian Federation conducted a regression analysis, regarding their digitalized economy, making up 2.6% of the country's gross domestic

product, ranking globally at 16. (Zaborovskaia et al., 2020). The modernization of a digital economy has human capital as a key component in its strategic role (Kuznetsova et al., 2019). Human capital utilization is the beginning of the transformation and the development of a digitalized economy.

Organizations can use human capital as a stand-alone policy in their business model, emphasizing value creation. Human capital is a crucial component of intellectual capital as corporate value creation in performance management (Harangozo, 2020). Kuznetsova et al. (2019) concurred that this intangible resource is critical to performance goals and executing corporate strategy. Integrating human capital into corporate strategy is no easy task because it is possible for leaders to not interact with employees (Harangozo, 2020). Human capital is an intangible asset with the potential of making up to 75% of corporate innovation and ideas, believed essential to the organization's performance (Mann, 2016). The challenge for leaders continues to be an engagement issue with their intangible asset.

Artificial intelligence (AI) is an introduction of human capital's impact into the human resource industry, bringing unique ideas into virtual reality. AI technology optimizes an evolutionary model to transform the workplace (Wang & Li, 2019). However, the challenge for AI is that it cannot incorporate unnatural thoughts into the decision-making process, and by inference, fails to capture innovative ideas. AI expands memory performance benefits by consistently adding information to easy retrieval systems (Wang & Li, 2019). Artificial intelligence continues to evolve the digital industry gathering human intelligence from speech recognition, decision making and

experience (D'Souza & Williams, 2017). This technology is a data collection process designed to help make future decisions from past trends and experiences.

Technical integration allows human behavior to be captured in a digital display. Technical integration is an investment in the human resources sector with a risk mitigation factor that assists the human capital (Chemmanur et al., 2019). Two challenges for work teams are the management team's quality and the potential capability among the human capital workforce (Chemmanur et al., 2019). An exploratory analysis of the relationship between top management and innovative employees can expand human capital creditability (Chemmanur et al., 2019). Top management teams recognize the investment requirement necessary to impact research development and implementation into technical integration (Vertakova et al., 2019). Personal creativity, cognitive knowledge in specific areas, personality, social skills, and work ethics are human capital components (Flair, 2019). Human capital is the sum of economic value based on what an individual can produce. Human capital has to be part of the solution of work engagement and not neglected.

Researchers investigated human capital concepts among students of both genders to evaluate the core values for economic development resulting in relational experiences (Edokpolor, 2019). Edokpolor (2019), revealed students of both genders have unmeasurable potential to grow in their final year of undergraduate studies. Senior students with human capital experiences positively correlate specific skills and abilities rather than general skills. Although education levels measure individual performance, specific development environments demonstrate academic elevation to sustainable

business development (Edokpolor, 2019). Human capital interactions must increase to balance value among both genders. A modernized civilized society cannot thrive without a well-educated engaging workforce as a key component for the future of a digital industry (Abdurakhmanova et al., 2020). Core values, including education and performance, are vital factors for positive human capital experiences.

Human capital and organizational behaviors are congruent components of sustainable business development. Researchers have analyzed associations between human capital and learning capabilities (Sun et al., 2020). A synergistic effect results from innovative thinking and learning methods applied to accomplish such an effect. Organizational engagement and motivational innovators shape the culture and help give a competitive edge, which involves relationships between human capital and learning capabilities (Sun et al., 2020). Applying ideas toward skill complexity is a strategic asset that distinguishes the advancement of human capital (Banalieva & Dhanaraj, 2019). The more the employee is entrusted with the learning process, the more human capital is promoted.

Relational Capital

Relational capital refers to establishing relationships between companies, institutions, and people that develop into a strong bond of belonging for the parties involved (Johnston & Lane, 2018). According to Johnston and Lane (2018), relational capital begins with collaborative thinking regarding new ideas and community engagement that contributes to workplace productivity. Relational engagement is a dynamic process that integrates collaboration, interaction, involvement, and

communication between the community and organizations that build cohesion. It is also a continuous process to grow community engagement along with an organization's strategic goals. Relational capital often builds relationships with customers and stakeholders within an organizational structure (Lee et al., 2018). Relational capital has a building capacity that gains momentum through consultation and feedback from relational engagement and organizational interaction.

Measuring relational capital involves using leadership interaction to gauge key employee engagement factors to determine value within the human resources industries (Ritala et al., 2021). Measurement indicators include questionnaires, statistical software, and research data on conditions within a relational capital method (Hosseini & Owlia, 2016). As a component of intellectual capacity, relational capital is the principle that promotes individual motivation and confidence (Emmanuel et al., 2019). Relational capital feeds on originality as a new framework of value that offers relevant expertise from the source of human engagement. It requires a healthy self-willingness to pursue an objective regardless of the outcome.

Researchers continue investigating relational capital influencing marketing, innovation, reputation, and information technology in a digital economy. Regression analyses from two surveys revealed the relational effect on a leader's capacity of human capital potential (Agostini & Filippini, 2019). However, the psychology of relational capital is the ability to gain enduring trust by providing quality products, availability, and consumer assurance. A positive customer experience can increase workforce value when

firms align standards with resources from relational capital (Kumar & Raghavendran, 2015).

Factors of a digital economy is an e-commerce trend for what consumers require from supply and demand. A company's organizational context is a strategic factor in maneuvering products for future technological industry goals (Alsaad et al., 2017). Industry metrics are helpful to executives used along with market research that gives insight into product and technology innovation. The environmental context creates a competitive atmosphere to perform to reach the next level of projections with sustainable profitability (Alsaad et al., 2017). Digitalization continues to transform organization's products, services through the internet data packages (Banalieva & Dhanaraj, 2019). This atmosphere influences innovation, causing businesses to interact with one another and generate collaborative behavior.

Work Engagement

Work engagement and employee satisfaction may appear similar; however, they are different concepts. Employee satisfaction refers to an individual's happiness with a job, and work engagement is the mental connection employees feel toward their workplace (Thompson, 2018). Although work engagement measures individual performance, employee engagement aims to achieve greater satisfaction levels (Thompson, 2018). Imaginative thinking can stimulate employee problem-solving capabilities fostering high satisfaction levels. Challenges arise for managers to increase employee engagement and build a collaborative environment within the workforce. A workforce that shapes the future may adapt to remote working possibilities. Remote

workers have become increasingly favorable to sustaining or improving productivity in a virtual environment (OECD, 2019). The Society of Human Resource Management (SHRM) (2017) conducted a survey measuring employee satisfaction finding high engagement levels among remote workers. An organization building a working culture centered on employees' ideas reinforces the company's mission through a dynamic virtual reality that encourages employee engagement.

Often employees can be satisfied with company benefits, such as pay, health care, and vacation time, but still not be engaged. Dempsey and Reilly (2016) suggested that employee engagement should involve a commitment to the job and dedication to employee careers or professions. Drivers of engagement impact how organizational leaders treat employees with respect and build a collaborative culture. Engaged employees are committed to their work and support coworkers with personal and corporate goals (Witasari & Gustomo, 2020). Creswell and Clark, (2017) found that organizations with high engagement levels exhibit optimism and a positive work environment, interpersonal trust, cultivated relationships, and the setting of clear goals. The quality effects of employee engagement result in leadership recognition, ownership of a given task, and the team accomplishment for the organization's mission. Data on employee satisfaction and engagement show higher productivity from higher engagement levels, and fewer missed engagement goals (Creswell & Clark, 2017). Benefits of employee engagement are an organizational resource of tools to include a positive, fulfilling, and work-related state of mind.

An examination of employee engagement must deploy measures that consider relationships and attitudes throughout the workforce culture. (Shuck et al., 2017) conducted a study to understand the correlation between employee engagement and job attitudes from survey responses ($N = 1,580$) to the engagement variance associated with job attitude predictor ($2k - 1 = 7$). Results revealed that job satisfaction contributed the most to employee engagement, followed by job involvement and organizational commitment. Evidence from a nomological network must consider the association with leadership and employee relationships producing high levels of employee engagement (Shuck et al., 2017). The Global 100 most sustainable corporations in the world averaged employee engagement 87% when employing relationship principles (Dumay, 2016). When applying employee engagement principles, organizational models should consider leader interaction and their relationship with employees.

Employee empowerment brings an intrinsic value to individuals when they can practice autonomy. When employees interact with each other within the workplace, this produces high motivation, leading to better job performance (Lee et al., 2018). The psychological empowerment of employees often helps change their job attitudes toward organizations when applied consistently (Lee et al., 2018). Employee engagement evolves as a counter to burnout when focused on self-efficacy, energy, and enthusiasm (Witasari & Gustomo, 2020). The contrast to employee engagement is negative outlook, exhaustion, and self-discouragement resulting in resistance toward organizational goals (Zulkifli & Ali, 2017). Psychological empowerment requires an employee's belief in the meaning of their work and the ability to execute successfully (Singh & Sharma, 2017).

Some researchers have concluded that future research on employee psychological empowerment in conjunction with employee engagement is vital to improving employee satisfaction (Alagarsamy et al., 2020).

Researchers refined and validated their analysis of employee engagement. Still, they have yet to scrutinize certain relationships that may lead to a more precise examination of leader involvement in team interaction. Engaged employees are individuals who thrive when they have a chance to contribute, have their voices heard, and have opportunities to learn and grow (Gallup, 2017). Engaged employees promote an attitude that builds a winner's culture by active participation and innovative behavior to overcome challenges (Kwon & Kim, 2020). Leaders are critical examples for their employees (Groves, 2020). Additionally, leaders must provide an organizational culture that fosters teamwork and promotes well-being amid competition to ensure that employees grow to unlock their full potential into maximum productivity.

Employee engagement is an essential driver of employee performance and individual well-being. Lappalainen et al. (2019) surveyed 503 employees of knowledge-intensive organizations to learn more about employee engagement, finding that analytical thinking, assertiveness, and leadership are essential factors. When individual engagement is present within the workplace, the interaction can minimize burnout, reducing individual performance and cultivating an innovative culture that honors employees' strengths (Gallup, 2017).

Innovative thinking among scholars about employee engagement has aided in the transition from an industrial to an informational age, resulting in an integrated virtual

workforce. Kwon and Kim (2020) debated innovative behavior as genetically congruent with an individual's productivity potential and an attitude that returns great dividends for new ideas. Shuck et al., (2017) substantiated the employee engagement is one of those attributes that drive the innovative behavior process. An engaged employee will encourage those in their surrounding environment with a positive mental capacity to maximize their involvement on a team. Critical thinking is a progressive path toward the informational age and embraces the virtual workforce's vision.

The transformation from a traditional to a virtual workforce is more prevalent of a need to adjust because of the COVID-19 pandemic. Since the inception of the COVID-19 pandemic, working from home has saved the U.S. labor market more than 89 million hours each week, further solidifying the move to a virtual workplace (Pietenpol, 2020). There is a window of opportunity to reskill, allowing employees to pivot to new careers and engage in a new journey. The goal of this study was to examine the workplace incivility of employee participation with interaction leaders to promote work engagement. Work engagement is a work-related mindset defined as a positive, fulfilling one characterized by vigor, dedication, and absorption (Bakker et al., 2002). Work engagement embraces the kinesthetic learning method for all employees within the workplace. Work engagement reflects a high degree of human behavior toward work fulfillment and achieving optimal performance.

Vigor.

Vigor displays an individual behavior characterized by high energy levels, mental resilience while working, and willingness to persist even when facing difficulties

(Schaufeli et al., 2006). Relational, the correlation of vigor and dedication is directly opposite to the core burnout dimensions of exhaustion and cynicism being strongly negative perspectives (Maslach et al., 2001). As patterns of relationships may differ between the positivity of vigor and the negativity of exhaustion, they tend to lack professionalism and self-efficacy. To reduce the individual burnout dimensions (exhaustion and cynicism), the expectation to expand work engagement factors to include vigor increases relationships among peers and leaders. Organizations lack to reach their intangible assets and transform them into monetary profits. For employees who suffer from burnout, leaders are confronted with the reception to embrace creativity to increase employee productivity (Schaufeli et al., 2019). Engaged employees offer the vigor trait necessary to provide a solution for leaders who embrace this state of well-being. Vigor is a process essential for the continual development of an engaged employee and work engagement.

Dedication

When an employee has a task, the human mental behavior challenges the individual's sense of purpose and pride, producing enthusiasm. Dedication reflects an individual being firmly involved in their work, experiencing a close sense of significance, closeness, inspiration, and challenge (Bakker et al., 2002). Dedication is a psychological stimulus filled with personal accomplishments, goal accomplishment, and challenge achievement (Maslach et al., 2001). Dedication directly opposes cynicism, contrasting negative behavior with positive movement to achieve a goal. Poised to move toward goal-setting objectives, employees who possess dedication will improve the workplace.

For employees who engross themselves in their work, the environment must foster encouragement, purpose, and inspiration from peers and leaders (Demerouti et al., 2001).

For goal-oriented employees, dedication must be present and instilled within the individual, guided by an inner desire to devote themselves to obtaining success. An engaged employee does possess the dedication to grow internally and maximize their productivity in the workplace.

Absorption

Absorption concurs with being fully involved and happily engaged in one's work, not allowing time to be a distraction when presented with a challenge but focused on completing the task. Absorption correlates with work engagement to contrast the professional efficacy of turnover intentions (Bakker et al., 2007). Absorption is the last dimension regarding the measurement of work engagement relative to the instrument used in this study. Absorption has significant weight for the engagement factor when analyzing data in various work industries. As an employee matures within the engagement factor, absorption allows an individual to embrace every aspect of work. Questions that measure absorption reflect time during work, focus during work, happy emotions while working, and how someone immerses themselves during work (Schaufeli et al., 2006). Absorption is a complete immersion into their work, achieving authentic engagement. This dimension embodies the last subscale of work engagement utilized within this study.

Intellectual Capital

To understand the value of intellectual capital, Dumay (2016) compared two variables, knowledge and money, that produce organizational profitability in the forms of wealth or value creation. Dumay referenced intellectual capital as the sum of everything everybody in a company knows about what gives it a competitive edge, including knowledge, experience, and information that creates wealth. A bank refers to wealth creation as increasing money accumulation or stock conversion (Dumay, 2016).

Intellectual capital brings a new modern era that reference a new knowledge economy as a key driver for value creation to organizations (Rossi et al., 2018). The value creation perspective is the concept of value itself dwelling in the organization's human capital.

Dumay (2016) argued that intellectual capital supports wealth creation and supported the myth that organizations reflect human capital. Dumay's research led to examining the reason for abandoning reporting an organization's financial information among its shareholders and considering an ethical approach toward maximizing intellectual capital instead. Dumay dispelled the wealth-creation myth from human value as vulnerable to academic development, language proficiency, and intangible resources. Dumay's (2016) research highlighted the need to reveal the profit potential of intellectual capital information previously secret or unknown. The state of intellectual capital within organizations when education among low-level workers increases by 20% (Zhilenkova et al., 2019). Furthermore, 62% of employees had flexible work arrangements, and companies reported 423 weeks' worth of time-sharing skills with indigenous people. Dumay's approach for a company's stewardship to society is to not focus on wealth

creation but consider social, cultural, and human values for the future of intellectual capital.

Intellectual Capital Disclosure and the Web 2.0

Intellectual capital (IC) helps organizations develop solid financial relationships to understand stock performance through disclosures utilizing Web 2.0 software (Massaro et al., 2017). Research on 10 significant companies within U.S. markets showed that disclosures trading on the New York Stock Exchange represents the organization's intellectual capital value (Massaro et al., 2017). Financial information represents online communities where investors read, analyze, and collaborate about topics related to the stock market (Zhang et al., 2016). Zhang et al.'s (2016) analysis of variance model showed intellectual capital's human impact on innovation. Zhang et al. concluded using a logistic regression method confirms that the human and relational capital variables are relevant in measuring strong relationships toward meeting an objective. In this study, the goal was to investigate attributes of IC in all financial markets with a concentration on human capital and the impacts within the business environment.

Intellectual Capital in an Innovative-Digital Economy

The role of intellectual capital is vital in developing an innovative digital economy. Zhilenkova et al. (2019) presented a new model of globalization, transitioning from a knowledge-based economy to a creative digital economy and observing the importance of human capital intellect as the growth driver to ensure territorial competitiveness. The development of intellectual capital channels aligns human, relational, and structural relationships building an information repository for access to

organizational leaders. (Massaro et al., 2017). Intellectual capital is the foundation for organizational structure, exploiting accumulated knowledge, skills, and ground-breaking ideas to propel an organization.

Intellectual capital presents organizational challenges to stimulate ideas and thought creation. Managers can leverage IC to evaluate employee potential within an industry. IC is used to take a critical view of how intangible variables, including human, relational, and value-added components, helps to elevate organizations (Rossi et al., 2018). Mohammad et al. (2019), explored the impact of intellectual capital on entrepreneurship and finance economies using the value-added intellectual coefficient (VAIC) model. Mohammad et al. (2019), review of empirical research, related to IC, revealed an innovative revolution in financial performance in the banking sector showing technological breakthroughs, transformations, and dismantling barriers for banks investing in IC to sustain competitiveness. However, the VAIC model was used to measure IC for secondary data storage (Rossi et al., 2018). The stimulation of IC growth will increase intrinsic value among employees and leaders designed to meet organizational engagement challenges.

Research on IC includes optimistic assessments for business start-ups and organizations engaged in emerging labor markets to use IC to accomplish their goal. There may be a very pronounced mismatch between the demand for emerging technology and the supply of IC needed to meet the challenges (Schebesch et al., 2016). IC is composed of employee knowledge and organizational procedures. Entrepreneurship stimulates the workforce to increase emerging economies (Rossi et al., 2018). IC

increases value among the plans for a global reach through businesses to consumers.

Employees use IC to strengthen organizational value by maximizing the intangibles of the corporate culture. However, the challenge is the intangibles, such as innovative thinking, for many organization leaders overlook this invisible intellectual capital asset.

This study will examine mass customization strategies between e-commerce and knowledge management, focusing on entrepreneurship as a tool to transition unemployment into workforce mitigation.

Employees can gain a competitive advantage in a dynamic environment by learning theories of IC. Lin (2011) used the company's business model to evaluate the individual behavior of the organization's human capital to determine its competitive advantage. The company's model has also been used to examine the factor and trust theories and differentiate between organizational qualities and beliefs (Zhilenkova et al., 2019). Information systems provide service qualities through the influence of relationship commitment and perceived risk. Liu's study was a laboratory experiment to show the process of motivating employees resulting in a successful business outcome for continuance improvement. By implementing the company's intellectual capital, organizations can improve their competitive advantage in a dynamic environment.

Employer-Employee Relationships

Building employer-employee relationships are necessary for developing interactive skills between coworkers, employees, and their direct supervisors. Kim et al. (2016) studied relationships among subordinates and immediate supervisors using the LMX model to measure job satisfaction. Kim et al. argued that customers respond to

service directly, validating how relationships mediate employee satisfaction on the job. The development of future leadership talent is vital to building relationships through formal mentorship and leader programs (Lee et al., 2018). Management research variables often impact interpersonal relationships, and the authors referred to work relationships as an emerging, dominant field of inquiry in organizational behavior. By understanding corporate culture and strategic objectives, an employer-employee relationship can be more effective in achieving team goals. The challenge remains for global leaders to identify cultural needs among diverse ethnic groups and export them across various regions. The LMX theory can be used to examine the quality of relationships related to organizational structure (Kim et al., 2016). Leaders must implement a climate for creating ideas and encourage an employer-employee relationship to crystalize the corporate vision and nurture individual ambition.

Self-Efficacy and Leader Interaction

Employees perceive the effects of leader-employee interaction on intrateam involvement, and relationship building affects how leadership empowerment affects employee and team engagement. Hybrid employees are leaders who elevate ideas, engage their teams, and do not allow other members to foster a self-seeking climate within the group (Li et al., 2018). Hybrid employees encourage ideas by identifying intrinsic motivation (Li et al., 2018). Leaders are key role examples to their employees and play a pivotal role in influencing an employee's motivation and creativity, which allows them to take ownership of their craft and sustain it throughout their professional career. This study will further examine the self-efficacy of human capital participation with

organizational leaders for the purpose of work engagement. Human capital effectiveness measures the extent to which employees acquire skills to complete their tasks (Lee et al., 2018). Work engagement is influential to individual fulfillment, characterized by enthusiasm, dedication, and achievement (Karatepe & Aga, 2016). Work engagement is an embodied mediator between individual employee interaction and leader support (Lin & Tsai, 2019). Employees who are highly self-efficacious are confident and often engaged in their work in the industry of first responders.

The healthcare industry is a self-efficacy environment that can reveal performance differences between engaged and disengaged workers that demand efficient productivity. Health care work engagement often includes the concepts of commitment, dedication, and pride for achieving organizational goals (Dempsey & Reilly, 2016). Based on the health care engagement debate, there are distinct differences between work engagement or job satisfaction, involvement, and levels of effort (Lee et al., 2018). Engaged workers invest in themselves through their work roles, exercise energy and enthusiasm that define passion, and connect with their organization. Disengaged workers are unhappy with their work; feel burned-out, apathetic, and unattached; and undermine engaged workers' accomplishments (Lee et al., 2018).

A self-efficacy and leader correlation can reduce employee turnover intentions and increase an organization's value of resources when implementing work engagement policies (Vertakova et al., 2019). Through the promotion of employee engagement, employers that foster a motivational process yield a lower incline percentage for an employee to leave the organization (Caesens et al., 2016). In the meta-analysis, individual

factors measuring work engagement revealed the consequences of organizational commitment and turnover intentions. An individual with an engaged correlation who scored in the top quartile on work engagement significantly outperformed the disengaged employee on crucial performance outcomes.

Manager's Role in Work Engagement

Although policy and processes matter, an interactive manager is crucial in achieving work engagement to produce optimal performance. Hero leaders or managers who engage with their employees account for 70% of team engagement variance (Gallup, 2017). Managers are responsible for advocating for and hearing the employee's voice, ensuring opportunities to develop team culture and connect them to organizational success. Often managers become coaches when engaging in conversations and building relationships among the team. Coaching is a mindset that managers instill within individuals to focus on continual growth and their future potential (Gallup, 2017).

Leadership within small businesses can affect work engagement in greater capacity because of proximity. Examining leadership styles among small businesses is essential to organizational management because small businesses are the backbone of the U.S. economy (Barefoot et al., 2018). Fiedler (1978) began developing the first situational leadership theory, named the contingency theory for leaders. Fiedler believed that leaders do not change styles; instead, they change their approach to the situation. The theory can be used to help determine if a person's leadership style is relationship or task-oriented and whether the leader's style maximizes team performance (Fiedler, 1978).

Similarly, in the path-goal theory, House (1996) posited that leaders could adjust their behaviors to adapt to contingencies by applying the most suitable style for the given situation. House contended that influential leaders motivate their subordinates to meet both individual and organizational goals by leveraging the situation toward individual talent. Managers adapt to situational occurrences and shape the environment for engagement. Leadership is sustaining momentum for positive change that starts with addressing real problems that impact work engagement. It is debatable that employees' social culture is a mediator in the relationship between personal value and engagement (Nekula & Koob, 2021). For a domestic economy to emerge into a global economy, diverse ethnic groups must unify to propel into a thriving economic phenomenon. Social change research in history is a transformation process of economies rather than global economic development (Nekula & Koob, 2021). Cultural diversity defines the constant evolution that happens universally, and adjustments in leadership are needed to adapt to a positive change among work engagement.

Companies that operate globally need leaders to be efficient in engaging with employees to perform at a high level. Leaders need to be able to visualize opportunities and take control of them; they also need to be self-motivated and able to influence others to accomplish goals for the need of customers (Andersen, 2018). Leaders should empower team concepts to foster an innovative mindset, develop solutions, and change the business society for good (Andersen, 2018). Determining the effect of empowering leadership on employee engagement could correlate with the role of individuals' emotional intelligence and autonomous behavior (Alam & Zaheer, 2021). This research

will reflect how relationships influence the decisions between human capital and work engagement, revealing measured results through ethical evidence of quantitative research.

In this study, the goal was to examine work engagement as a foundational principle to produce high-performance teams and reduce the challenge for leaders to promote individual productivity. Today's organizations must ask employees to execute tasks, engage in complex problem solving, and generate compelling ideas through innovation and knowledge sharing (Kumar & Raghavendran, 2015). Leaders do not force people to follow; they invite them on a journey (Andersen, 2018). Leaders should encourage employees to stimulate thoughts and ideas that engage and target solutions based on industry demand. Mentoring leaders encourage employees to look for opportunities to offer solutions that inspire team synergy. This study's focal point is to stimulate employee ideas and develop their talent to reach their full potential. Ideas illuminate a climate for change, and leaders must permit a welcome environment of support to overcome failure.

Internalization Theory for the Digital Economy

The trend toward a digitalized economy results from modernized technology's impact throughout the business community. Brouters et al. (2016) presented an internalization theory that emphasizes the distinct advantages of implementing technology to reduce transaction costs, increase speed, and scalability. The internalization theory examines firm-specific assets (FSAs) and predicts how companies expand their businesses across international borders (Banalieva & Dhanaraj, 2019). The FSAs include the innovative ideas of human capital and applied technology of digital networks.

Banalieva and Dhanaraj (2019) compared the advantages of each digital resource as service multinational enterprises and FSAs, outlining the impact of technological advancement against the human capital resources, respectively. The results of Banalieva and Dhanaraj internalization theory could lead to a transferability toward digitalization. Banalieva and Dhanaraj highlighted that the advancement of skills and knowledge reflects human capital achievements, increasing intuition, and an assortment of ideas that add to digital modularity.

Defining and Measuring the Digital Economy

The first step in a digital economy is to develop a comprehensive approach to determine economic growth. (Barefoot et al., 2018) used estimates from the GDP technology statistics to target digital change in the overall U.S. economy. Estimates by the Bureau of Economic Analysis (Barefoot et al., 2018), showed a bright forecast for a digital economy growing at an annual rate and accounting for \$1.2 billion of the overall GDP. Barefoot et al.'s research enlightens customer relationships to promote technological advancements among business and digital markets. Furthermore, the BEA pays particular attention to the context of B2B services and addresses any lagging effects within the overall economy.

Barefoot et al., (2018) raised two potential measurement issues with the digital economy: (a) reporting revenue differently (i.e., net and gross) and (b) errors in operating costs and earnings. Barefoot et al. revealed other measurement issues, including increasingly employing digital inputs, online/digital advertising, communication teleconferencing, and financial and operational software. In the 2022 economy, e-

commerce platforms provide the customer with quick and user-friendly services and access to all major industries. The digital economy continues to pose measurement challenges from traditional calculating methods of GDP to modernizing digital measures. Digital satellite accounts are an essential step in measuring a digital economy's impact on a broader U.S. economy. Product production no longer offers organizations a sustainable competitive advantage in a digital economy. The GDP annual growth rate grew by 3% throughout the economy due to technological advances (D'Souza & Williams, 2017). Developments in cloud computing, advanced robotics, AI, and virtual reality have transformed a new global economy (D'Souza & Williams, 2017). Moving forward, companies will use digital technology to advance more industries in production to increase safety and reduce risk mitigation. Successful organizational leaders recognize employees as their most valuable assets, considering new ideas, purpose, collaboration, and engagement necessary for a digital economy transformation.

Transition

Section 1 included introducing the trajectory of work engagement in the workplace and its increasing importance of relationships with corporate organizations worldwide. This section contains the background of the problem, the problem statement, the purpose statement, the nature of the study, and the research questions. I provided the theoretical framework of JD-R theory, operational definitions of key terms, assumptions, limitations, delimitations of the study, and the significance of the study. This section included a review of the professional and academic literature consisting of (a) a synthesis review of JD-R theory of work engagement, (b) contrasting theories, (c) independent and

dependent variables, (d) employer-employee relationships, and (e) an examination of work engagement in a digital economy.

Section 2 will consist of the study's purpose statement and describe my role as the researcher in this quantitative research. Explanation includes participants' eligibility criteria, research method, research design, population and sampling procedures, and ethical research. The section also includes description of the data collection instruments and techniques, data analysis procedures, and the means to ensure the study's reliability and validity. Section 3 will include the results of this quantitative correlation study, utilization of applied business practices and implications for cultural change, and further research application.

Section 2: The Project

In Section 2, I outline the approach and the methodology used in the study. The section begins with a restatement of the purpose, followed by a discussion of the role of the researcher. Discussion includes the participants in the study, the research method, design, and the population and sampling used. I state the procedures for ethical research and how they affected the data collection instrument and techniques. This study concludes with the data analysis and information on the study's validity.

Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship, if any, between employee human capital, relational capital, and work engagement in a digital economy. The independent variables were employee human capital and relational capital. The dependent variable was work engagement. The targeted population consisted of technical managers and employees with companies located in the metropolitan area of Atlanta, Georgia, who had been in business for 5 years. The growth of intellectual capital contributes to positive social change. This intellectual growth expands an organization's potential by providing leaders with strategies to engage employees and bolster their organizational commitment. Employees often enter a work role seeking frequent communication with their leaders for development and opportunities. When employees engage and influence others toward doing meaningful work, they are more likely to make the most of their talents and contribute to their communities and society.

Role of the Researcher

The role of the researcher can influence the integrity of the study. Before developing a research study, the researcher must understand how to collect, analyze, and interpret data based on the research questions (Horlings, 2022). Researchers who use quantitative methods try to observe objectively and measurement (Horlings, 2022). Using the quantitative methodology, the researcher collects data with the goal of impartiality to the participant's emotions or feelings. As a manager within a technology company, my experience correlates with the direct influence of relationships with employees.

The data collection process for this research consisted of distributing surveys through a web-based application to supervisors and employees. Researchers must follow specific practices and consider their role when conducting research (Abraham et al., 2019). The researcher should consider the level of ownership of the problem, how they relate with participants, and their actions regarding the study results (Wittmayer & Schapke, 2014). The *Belmont Report* instituted ethical guidelines to protect the researcher and the participants (U.S. Department of Health & Human Services (USDHHS, 1979). Ethical research is the integrity of data collection that guides the researcher. This data collection process aligned the survey with the measurements of an engaging workforce.

The focus of this quantitative correlational study was to examine human interactions among leaders and employees related to engagement. Researchers must align themselves to specific ethical considerations when gathering data (USDHHS, 1979) and (Saunders et al., 2016). The *Belmont Report*, a foundational document, provides ethical guidelines for protecting the researcher and the participants (USDHHS, 1979).

Researchers should consider the sample size studied and refer to the *Belmont Report* for potential ethical concerns. Business owners should explain to participants the purpose of the study, the nature of the study, and the procedures for safeguarding the participants' information (Saunders et al., 2016).

Researchers should also use proper statistical techniques to interpret the findings related to the research questions surveyed. Sijtsma (2016) provided a model to promote data analyses in the frameworks of questionable research practices and responsible conduct of research. Moreover, Linder and Farahbakhsh (2020) argued that the moral quality of a researcher's approach depends on the freedom of science, norms in an academic field, and trust and reliance on published results. Anderson (2016) explained that the importance of responsible conduct of research training is to produce better awareness of personal misconduct, positive attitudes, and improved behavior, resulting in good ethical decision-making skills when conducting research. My goal was to heed the guidelines of both frameworks when performing data analysis to reinforce the study commitment to ethical research practice.

Participants

The population of interest for this study consisted of technical managers and employees in the technology industry. The goal was to survey employees of technology companies, supervisors, and others in positions of influence within the organization. Researchers use surveys to measure participants' perceptions, attitudes, and emotional states (Frey, 2018). Survey researchers can also use observational and physiological methods to gather more information (Frey, 2018). The engagement survey included

technology entrepreneurs with companies located in the metropolitan area of Atlanta, Georgia who had been in business for 5 years.

The study strategy for finding technology entrepreneurs and employees in the Atlanta area consisted of using professional networks and social media outlets such as LinkedIn and Facebook Live and leveraging snowball sampling promoting participants to share my study with other entrepreneurs. The eligibility criteria for this study's participants were that they had (a) full-time employment, (b) a job in the technology industry, and (c) a supervisor or management role. To access the participants, I met with technical managers and employees in the metropolitan area of Atlanta, Georgia, by attending technology business conferences to discuss the study purpose, participants' rights, and how the survey ensured data integrity and participant confidentiality. The goal of this study was to express how relationships among employees and executive leadership influence work engagement. This study's design explains each participant purpose, risks associated with the study, and assurance of participant confidentiality.

Research Method and Design

Research Method

Researchers use one of the three methods (quantitative, qualitative, and mixed methods) to understand business problems (Johnson & Christensen, 2019). Researchers choose research methods based on the research question (Abulela & Harwell, 2020). My goal was to seek to understand the relationship between human capital, relational capital, and work engagement. Understanding the contextual factors related to the different

research methods is also essential when deciding which to use (Hong et al., 2018).

Validity issues should also be considered when deciding on a method (Lub, 2015).

Qualitative research makes application of human experiences from personal interviews, case studies, and research questions that builds on a behavioral framework. Lub (2015) argued that the different purposes of qualitative research result in findings that are difficult to validate and align with scientific paradigms. The goal was not to gather information in this study through interviews to engage with human perception, interpretation, and philosophy; therefore, a qualitative method was not appropriate for this study.

Mixed-methods research was not justifiable because a qualitative method was inappropriate for this study. Mixed-methods research combines characteristics of qualitative and quantitative research methods (Hong et al., 2018). Mixed-methods research integrates qualitative and quantitative data collection elements, analysis, and inference techniques for breadth and depth of understanding and corroboration (Creswell & Clark, 2017). Therefore, the mixed method did not apply to study.

Quantitative research involves the analysis of raw numerical data through systematic testing and a mathematical approach (Allen, 2017). Researchers gather quantitative data as part of a scientific inquiry in which they access a population and measure variables (Allen, 2017). A quantitative research method was appropriate for this study because my goal was to understand the relationship between human capital, relational capital, and work engagement through statistical analysis. Selection included a

quantitative correlational research method to examine the relationship, if any, between two independent and dependent variables.

Research Design

Correlational, experimental, and quasi-experimental are among the three quantitative research designs accessible to researchers (Patton, 2018). An experimental design assesses causal relationships through a random comparison of two groups (a control group and a test group), which allows for manipulation by the researcher (Rooney & Evans, 2019). Quasi-experimental designs are experiments that allow causal inferences to be made regarding an independent variable by manipulating the intervention and observing the outcome (Frey, 2018). This study did not require a random comparison or causal inferences of interventions; therefore, an experimental and quasi-experimental design was not appropriate for this study. A correlational design is useful for revealing whether the independent variables contribute to employee value and provide a specific measurement of the degree of productivity and enthusiasm engagement produced. A correlational design centers on the association between two or more variables and their contribution to predicting another variable (Blanca et al., 2018). The goal of this study was to measure the relationship, if any, between leader interaction, human capital, and work engagement level; therefore, this study's correlational design was appropriate.

Unlike experimental and quasi-experimental designs, a correlational design determines the prevalence and relationships among variables and predicts events from data and knowledge (Curtis et al., 2016). A correlational design differs from experimental research because there is no control group, no random selection, no random assignment,

or no active manipulation (MacDonald et al., 2019). Because the study did not require manipulation of independent or random variables, neither experimental nor quasi-experimental designs were appropriate for this study.

Population and Sampling

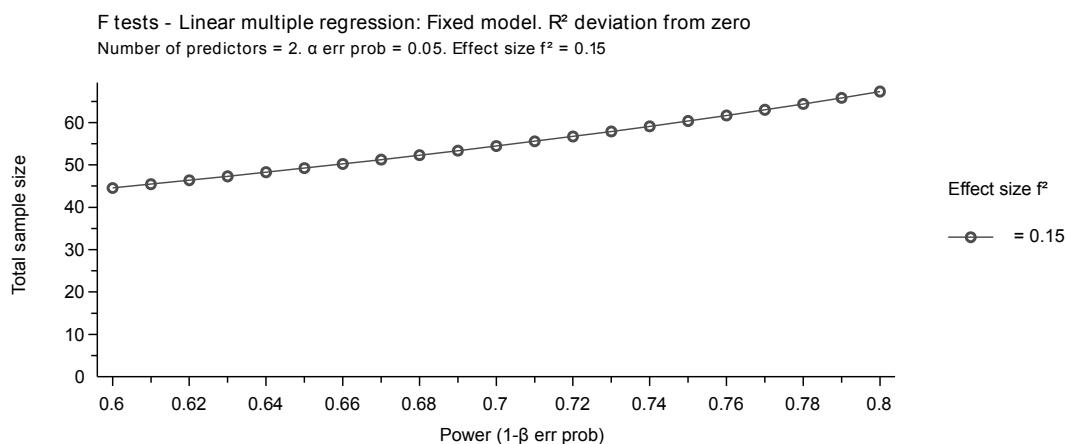
This study's population was a small section of innovative technical managers and employees located in the metropolitan area of Atlanta, Georgia. A sample size of 68 to 107 was determined by the G*Power analysis (see Faul et al., 2007). Participants consisted of employees and supervisory positions in the technology industry working in the digital economy. Selections included organizations with innovative ambitions and vision to include small to midsize information technology companies being in business for at least 5 years.

The study included the use of a nonprobability sampling technique. Nonprobability survey samples are cost-effective when resources are limited or reliable sampling is not available (Chen et al., 2022). Nonprobability sampling consists of two techniques: purposive and convenience sampling (Wolf et al., 2016). A convenience sample is one drawn from a source that is conveniently accessible to the researcher (Wolf et al., 2016). Another purpose for using a nonprobability, purposive sample is when time and budget have limitations (Andrade, 2021). In this study, I used the purposive sampling technique because of accessibility to participants, cost, and geographical proximity issues.

I used G*Power analysis to determine the minimum sample size for this study. G*Power, v.3.1.9.6, is a statistical tool to test the correlation and regression analyses

domain and behavioral interactions (Faul et al., 2007). Selecting an appropriate model aided in measuring the sample size. For a medium effect size of $0.15 (f^2 = .15)$, a power level of .80 and a statistical significance level of .05 ($\alpha = .05$) with two predictor variables was used. The power level of .80 is the maximum probability to reject the null hypothesis. These parameters produced a minimum sample size of 68 participants. The error probability of .05 required a sample size of $N = 68$. A power $(1-\beta) = .80$ selection was to identify the minimum sample size to ensure the findings' reliability. The power analysis provides both conditional (fixed predictors) and unconditional (random predictors) models of multiple regression (Gatsonis & Sampson, 1989). A power $(1-\beta) = 0.80$ selection identified the 80 to 95% confidence levels, for which 107 was determined.

A sample size of 68 to 107, determined by using the G*Power analysis, was appropriate for this study. This sample size is justifiable for the medium effect of $f^2 = .15$ using linear multiple regression statistics (see Figure 1). Choosing an appropriate effect size avoids Type II errors when the researcher fails to reject a false null hypothesis (Sullivan & Feinn, 2012). Faul et al. (2007) defined Cohen's f^2 effect sizes as .02 (small), .15 (medium), and .35 (large) to quantify variables for multiple regression analyses.

Figure 1*A Priori Sample Size by Power***Ethical Research**

As researchers prepare to explore further study, participants must consider the adverse impact it may have on the target audience. Ethical practices ensure discipline in research, while recruitment of participants' privacy is of high consideration, ensuring legal compliance, obtaining informed consent, and data for nonresearch purposes are properly appropriated (Gupta, 2017). Gupta (2017) found that researchers using internet-based methods increased by 49.5% from 1995 to 2016, resulting in a rise of ethical concerns regarding obtaining informed consent, ensuring participants' anonymity, and giving them the right to give or withdraw consent at any time. The researcher's ethical responsibility is to inform participants of their rights in carefully considering the individuals' expectations through voluntary informed consent (Facca et al., 2020). Therefore, to ensure ethical research compliance, I focused on *The Belmont Report* (USDHHS, 1979), as advised.

There were no requirements for participants to participate in this study. This study ensured that each participant understood the purpose of the study, the confidentiality of the participant's data, and the use of the data. There was no attempt to insert participant names or other identifying information on the survey. I did not target any surveys to any nonparticipants from the study. The informed consent form contained information regarding the participant's involvement and their ability to withdraw at any time without penalty.

All participants received an informed consent form explaining the study's purpose, understanding their rights, and confidentiality. Informed consent is critical for protecting individuals in research participation, assisting with ethical reporting of best practices and assessment (Weissinger & Ulrich, 2019). The consent also contained information regarding the participant's involvement as voluntary and withdraw their participation by sending an email, opting out of the study. The consent form linked through the social media platforms, using SurveyMonkey to buy audience participation options, to target specific participants for distribution to technical managers. Participants did not receive benefits or compensation for participation in the study. Upon completion, all data will remain password-protected for not less than 5 years before destruction. Walden University student researchers must obtain approval through the Institutional Review Board (IRB) and receive an IRB approval number; my approval number for this was 08-19-22-0281973. Participants' data included disclosure of individual criteria from a targeted audience within the Survey Monkey tool with security of names, addresses, or places of employment.

Data Collection Instruments

Data measurement for this study used three instruments, administered electronically to participants. The human capital investment index (HCI) measured the human capital variable; the multimodal social capital transfer in creative industries (MSCTCI) questionnaire measured the relational capital variable; and the Utrecht work engagement scale (UWES-3) measured the work engagement variable. The screening surveys characterized an accurate sample to ensure the participants met inclusive criteria.

Human Capital Investment Index (HCI)

Kwon and Rupp (2013) developed the human capital investment index (HCI) to measure how organizations invest in human capital. The HCI uses the human capital theory, social capital theory, and the cost-benefit perspective to examine high-performing employee turnover and firm performance (Kwon & Rupp, 2013). HCI has 10 items on a five-point Likert-type scale, with 1 indicating *strongly disagree* and 5 indicating *strongly agree*. HCI consists of three factors: (a) intensive employee training and development (3 items), (b) extensive selection (3 items), and (c) incentive-based pay (4 items) (Kwon & Rupp, 2013).

A confirmatory factor analysis evidence by the three factors resulting (model $\chi^2 = 67.34$, $df = 32$; GFI = .92, IFI = .96, CFI = .96). The HCI index showed enough internal consistency to justify aggregation. Kwon and Rupp (2013) sampled the geographical locations surrounding Korean businesses. The samples from 155 businesses helped validate the 10 items from the HCI. Kwon and Rupp sampled additional 167

undergraduate students and 114 workers for this measure as well, and with the convergence of two groups yielded ratings ($t = -.22$, ns; $r = .93$, $p < .01$).

Multimodal Social Capital Transfer in Creative Industries Questionnaire

To measure the formation of job effectiveness using team commitment and knowledge transfer as mediators, the study used the multimodal social capital transfer in creative industries questionnaire. Social relationships that reflect individuals' solid and positive characteristics and values include reference as relational capital (Lin, 2011). The multimodal social capital questionnaire represents a multiple mediation examination process that investigates relationships between organizational learning and knowledge transfer among employees. A seven-point Likert-type scale using from 1 (*totally disagree*) to 7 (*totally agree*) to measure the constructs. Based on previous studies, the following constructs were included in the questionnaire: cognitive capital, structural capital, and relational capital. The goal was to utilize the relational capital construct that consists of four items to measure factor loading, composite reliability, and average variance.

The validity of the measures in the study was verified using confirmatory factor analysis. All factor loadings measuring the same constructs suggest all indicators effectively measured their corresponding construct and supporting convergent validity (Lin, 2011). In addition, the average variance of each construct exceeded .516, revealing each captured a higher variance in the underlying construct attributable to minor measurement error.

Utrecht Work Engagement Scale (UWES-3)

The instrument selected for work engagement was Bakker et al.'s (2002) Utrecht Work Engagement Scale (UWES-3). This instrument allows a researcher to examine three engagement measurement dimensions. The dimensions are (a) dimension 1-vigor, (b) dimension 2-dedication, and (c) dimension 3-absorption. Dimension 1 measures the most unambiguous impact on the employee's energy level, which references the vigor's hallmark (Bakker et al., 2002). Dimension 2 measures the highest degree of enthusiasm and emotion associated with work dedication (Bakker & Demerouti, 2011). Dimension 3 refers to happiness directly correlating to absorption (Bakker & Demerouti, 2011). Schaufeli et al. (2019) reviewed the dimensions for reliability and confirmed Cronbach's alpha for internal consistency, ranging from .77 through .85 across 5 national samples. Per Schaufeli et al. (2006), data collection from five different countries (N=14,521), with results indicating factorial validity demonstrated using confirmatory factor analyses. Three scale scores have good internal consistency test-retest reliability (Schaufeli et al., 2006). Schaufeli et al. (2006) sampled five geographical locations: Finland, Japan, the Netherlands, Belgium, and Spain having internal consistency and factorial validity.

Validity is the study's confidence that determines results through multiple choices. Face validity determines an alternative process of the UWES (Schaufeli et al., 2006), selecting the most characteristic item of each subscale. Content validity results agree with the JD-R model that job resources are more robust and consistent to work engagement than job demands (Bakker & Demerouti, 2007) and (Schaufeli & Taris, 2014). UWES is widely used to measure work engagement for any occupational group; applying the three

dimensions of scale examines the relationship of an employee's vigor, dedication, and absorption uniquely correlates to the variables of this study. The goal was to use the UWES to determine the correlation between two independent variables in conjunction with an ordinal measurement for surveys.

UWES has nine revisions for test-reliability of engagement measure. The latest revision surveyed both students and employees to identify positive, fulfilling, and work-related states of mind characterized by core dimensions: vigor, dedication, and absorption (Gusy & Wolter, 2019). The UWES is a 9-item survey used to measure work engagement. Items are scored on a 7-point Likert-type rating scale ranging from 0 (*never*) to 6 (*always*). In contrast, advances in estimation software and the interpretation of non-linear models require analysis specific to this study. Strategies of statistical coefficient for ordinal outcomes become entirely transparent because the probabilities are considered for interpretation.

Data Collection Technique

The tool the study used to distribute the survey is SurveyMonkey, a third-party online survey tool that enables data collection for filling the questionnaire and geospatial location details of the participant (see Nayak & Narayan, 2019). Due to health protection within a global pandemic, the consent form linked through social media platforms, utilizing SurveyMonkey buy audience option, to target participants for distribution. The estimated timeframe for completing the survey is 2 weeks, with a reminder post after 1 week. Because of the target audience usage, the surveys took 3 weeks without a reminder to participants.

The availability of mobile applications may help participants lacking computing and internet skills to encourage participation in online surveys. The advantage of online surveys is the valuable technique to store data in a repository after submitting the completed form (Nayak & Narayan, 2019). Another advantage of online surveys is their efficiency, data collection speed, low cost to distribute, and user-friendly administration (DeRada & Dominquez, 2015). A disadvantage is the low completion rate if participants perceive the survey is too lengthy and lose interest (DeRada & Dominquez, 2015). This study utilized survey instruments to measure the variables in the study because the correlation between job demands, job resources, and outcomes reflects an indicator of work engagement.

Data Analysis

This study's research question was: What is the relationship between employee human capital, relational capital, and work engagement in a digital economy? The hypotheses for this study are:

H₀: There is no statistically significant relationship between employee human capital, relational capital, and work engagement in a digital economy.

H_a: There is a statistically significant relationship between employee human capital, relational capital, and work engagement in a digital economy.

The goal was to collect and analyze data using descriptive statistics and three multiple regression analyses regression analysis using SPSS software (e.g., IBM SPSS AMOS 25; see Alagarsamy et al., 2020). Data analysis's importance in a methodological framework is understanding behavioral interactions and integrations over a short time

frame (i.e., a few weeks) (Shrestha & Bhatta, 2018). Shrestha and Bhatta (2018) stated a significant regression analysis characteristic helps address the pattern of relationships among interest variables. In multivariate regression, the value of R^2 increases in number only when the new variable improves the prediction power (Shrestha & Bhatta, 2018). Shrestha and Bhatta suggested that the time series model framework could help avoid spurious regression and obtain robust results. The goal was to examine the statistical analysis through the power values among the variables.

Other statistical analysis methods exploit specific ethical problems to reduce abstract logic within the research. A statistical analysis approach overlooks how the analysis is embedded with quantitative methods to include facts, notions, best practices, and rigor (Zyphur & Pierides, 2020). The primary purpose is to analyze multiple variables and how they influence the outcome through relationships. Analysis of variance (ANOVA) and Pearson's correlation coefficient are two data analysis methods that analyze two or more variables (Mokarami et al., 2020).

Non-statistical analyses were not appropriate for this study because the testing extraction does not correlate the relationship between the independent variables and the dependent variable of work engagement. Montgomery et al. (2021) revealed a numerical summary displaying the correlation coefficients of variables, showing how the individual data points differ over the target region. For this study, a simple correlation to predictive analysis of the power value data. The results of this study's results based on the strength of the relationships between the independent and dependent variables. For this analysis, the study included the use of G* Power linear regression, single regression coefficient to

examine whether a relationship exists between predictor variables and a variable of interest.

Quantitative researchers may underemphasize issues of validity when conducting data analysis. The data analysis must include quality tool selection, proper handling of missing data, clarifying the level of measurement of a dependent variable, and model checking (Abulela & Harwell, 2020). Although data analysis is solely a statistical base, the goal was to also provide psychological effects on human disengagement. This may impact my target population regarding competitive industries and individual performance.

Data Cleaning and Screening

An online survey is a customized method for data collection. A method for online collection is email surveys administered through web technology (Nayak & Narayan, 2019). Data screening and cleaning techniques are user-targeted methods used for a target population to improve data quality and minimize obscure information (Nayak & Narayan, 2019). Nayak and Narayan (2019) identified four challenges for online surveys are completing the form to include response rate, non-respondent characteristics, maintenance of confidentiality, and ethical issues possibility causing missing or data loss. These challenges will not impede the statistical inference of data nor distract the attention needed to complete the survey. To prevent bias or untrustworthy information, This study excluded surveys with missing data from the analysis. This study used graphs to test the normality of distribution and tables using interpolating points and predictors as an outlier.

Assumptions of Regression Testing

Ordinal regression analysis helps the researcher to understand the behavior of variables producing an outcome of interest. Ordinal regression involves two predictors, one dependent variable and one or more independent variables (Statistics, 2017). There are four assumptions when measuring ordinal regression. First, the dependent variable is measured an ordinal level (e.g., Likert point scale). Second, this study utilized categorical regression for the independent variables. Third, there must be no multicollinearity, having two or more independent variables with high correlation with each other. Fourth, having a cumulative regression with proportional odds means each independent variable has an identical effect with the ordinal dependent variable (Statistics, 2017). Under the assumption that errors follow a normal distribution, the coefficient outcomes could minimize the squared deviation (Jantschi et al., 2016). An essential approach to these assumptions is how the findings from the analysis constrict beliefs on the study's distribution of errors and validity.

Statistical distributions correlate on a progressive curve when two points meet. Normal distribution will show the distribution of power testing for ordinal regression with the assumption of measurement errors (Jantschi et al., 2016). In general, it is not appropriate to assume that the measurement error is from a normal distribution. Homoscedasticity requires parameters between independent and dependent variables with the same values (Chemmanur et al., 2019). A scatter plot represents values for the different numeric variables in this study. Evaluation included the data for violations by

making assumptions by observing behavioral trends identified in the preceding literature of this study.

Interpretation of Inferential Results

Inferential statistics was the evaluation method used to analyze the data. Inferential statistics tests a null hypothesis based on the study's rejection of findings and accounts for estimation errors within the samples (Gibbs et al., 2017). Inferential techniques helped to interpret results for population targeting (Gibbs et al., 2017). This study reveals results based on the strength of the relationships between predictor and variables of interest. In ordinal regression, the independent and dependent variables will reflect a combined score of the values (Jafary et al., 2017). A high ordinal regression indicates a strong relationship between independent and dependent variables (Gibbs et al., 2017). Based upon research using ordinal regression analysis interpretation of the results included the power value and effect sizes using inferential statistics.

Study Validity

This quantitative study included analysis of the correlational relationship between employee human capital, relational capital, and work engagement. Abulela and Harwell (2020) provided guidelines on the components impacting the validity of inferences, constructed measures, proper handling of missing data, and adequate measurement of a dependent variable. The validity of the research method and design supports the research findings' integrity (Westreich et al., 2019). Validity is an indicator for measuring constructs establishing the reliability of the data collected concerning a target population of interest (Westreich et al., 2019). Threats to the research are sample size, including

Type I and Type II statistical errors (Faul et al., 2007). The importance of research integrity in this study focuses on external, internal, and statistical conclusion validity.

External Validity

The first threat is the external validity of the measurements. External validity contrasts causal relationships when the researcher attempts to generalize different measures within persons, settings, and times (Lesko et al., 2017). External validity captures inferences drawn from a study's sample size from a broader population (Lesko et al., 2017). This study included the use of the G* Power analysis tool to calculate the sample size. Systematic reviews and meta-analyses limit the conclusions drawn to exclude external validity data. (Westreich et al., 2019). An objective of external validity is for the participants to ensure the quality of reporting warrants for each question when an inference concerns the broader population (Lesko et al., 2017). Leveraging the G*Power 3 software determines the generalized measurements, mitigates common statistical errors, and provides integrity to this study.

Internal Validity

The second threat is internal validity. Internal validity threat to validity prevents demonstrating a clear functional relationship across both variables (Chaffee et al., 2020). Internal validity threats pose an alternate explanation for the apparent causal relationship between independent and dependent variables if they are not adequately controlled (Flannelly et al., 2018). If the research findings are not reliable, the information provides no value to the study. The study included the use of a correlational design for this study, eliminating the threat of internal validity. For the integrity of the research results, this

study restricted participants to a one-time access to the survey to mitigate internal threats for this study.

Statistical Conclusion Validity

Statistical conclusion validity is another threat to my study. Statistical conclusion validity refers to the accuracy of a relation between the variables of interest (Fabrigar et al., 2020). A common inference reveals that replication in a study produces adequate statistical power, and failure to replicate generates a Type 1 error (Fabrigar et al., 2020). Poor statistical conclusion validity in original studies plays a central role in the Type 1 error illustrated by numerous replication literature statements. For this study, the G*Power analysis, a sample size of 68 through 107 was appropriate. The study included the use of ordinal regression statistics with a medium effect size of $f^2 = .15$. To ensure the statistical accuracy of the study, The sample size was exceeded by additional percentage to ensure the range was met and minimize the replication of Type 1 errors.

Transition and Summary

Section 2 included a restatement of the purpose statement and provided a critical discussion on the researcher's role. Examination included the criteria of the participants and their rights of consent. This study provided an examination of the research method and design used in the study. Also included was the sampling approach to the population with the estimation of the size utilizing linear regression analysis. This study was sustained by information on the importance of ethical practices within the research. This study concludes with a review of external and statistical conclusion validity. In Section 3, this study presents the findings of the research and the application within professional

practice. The data reflects on the implications the study has on social change and my research experience and recommendations for future research.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this quantitative correlation study was to examine the relationship between employee human capital, relational capital, and work engagement in a digital economy. The independent variables were human capital and relational capital. The dependent variable was work engagement. After conducting an analysis of the data, I rejected the null hypothesis and accepted the alternative hypothesis. The null hypothesis was that there would be no predictive relationship, while the alternative hypothesis suggested there would be a significant predictive relationship. In this chapter, three separate multiple linear regressions are conducted and presented. The results suggested that all three of the regression models were significant, indicating that there was a significant positive relationship of the human capital subscales and relational capital questions collectively on vigor, dedication, and absorption respectively.

Specifically, I present findings, application to professional practice, recommendations for action, and recommendations for further research. This study used a series of statistical tests using SPSS to include descriptive statistics, test of assumptions (normality, multicollinearity, homoscedasticity, and outliers), and multiple regression analysis. Lastly, a conclusion identifies reflections and experiences during this journey.

Presentation of the Findings

This study used multiple analytical descriptors, including descriptive statistics, testing of assumptions, and inferential results to provide a theoretical conversation and to conclude with an analytical summary. I conducted three linear regression analyses to

assess the research variables subscales. The human capital subscales of intensive employee training and development, extensive selection, and incentive-based pay, and the three relational capital questions significantly predicted each of the three employee engagement subscales (vigor [VI], dedication [DE], and absorption [AB]).

The significance variables for human capital and relational capital were statistically significant. The following statistical analyses to test the hypotheses were (a) descriptive statistics, (b) reliability analysis, and (c) multiple linear regression. Specifically, the human capital subscale of incentive-based pay, the *totally disagree* category of the first relational capital question, and the *disagree* category of relational capital of the third question significantly predicted the employee engagement subscale of VI. Results of the linear regression analysis indicated a statistically significant relationship by human capital subscales and relational capital questions combined ($p < .001$, $R^2 = 61.2$ [VI], $p < .001$, $R^2 = 61.6$ [DE], $p < .001$, $R^2 = 52.9$ [AB] with the sample size of $N = 125$).

Descriptive Statistics

Three linear regression analyses were conducted to assess whether the human capital subscales of intensive employee training and development, extensive selection, and incentive-based pay, and the three relational capital questions significantly predicted each of the three employee engagement subscales (VI, DE, and AB). Each subscale is discussed for clarity of results provided through regression testing. The completion of the findings is outlined in the analysis summary.

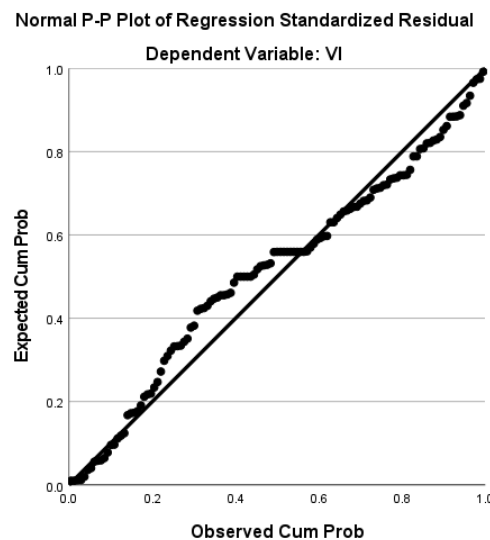
VI

The first regression analysis was conducted to assess whether the human capital subscales and relational capital questions significantly predicted the employee engagement subscale of VI. Prior to the analysis, the assumptions of normality, homoscedasticity, multicollinearity, and lack of outliers were assessed.

Normality. The assumption of normality was assessed by plotting a P-P scatterplot. For the assumption of normality to be met, the quantiles of the residuals must not strongly deviate from the theoretical quantiles (DeCarlo, 1997). Strong deviations could indicate that the parameter estimates are unreliable. The plot suggests that the assumption was met. Figure 2 presents a P-P scatterplot of the model residuals.

Figure 2

P-P Scatterplot for Normality of the Residuals for the Regression Model

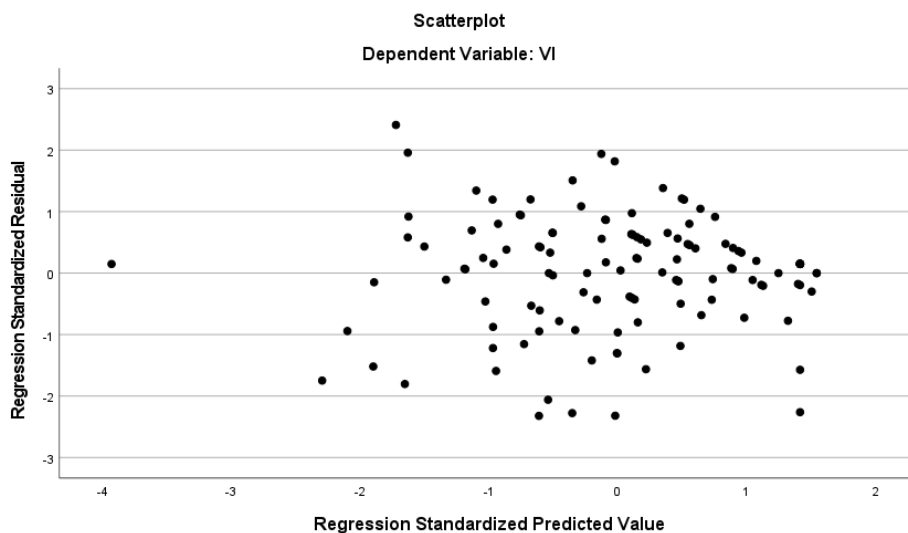


Homoscedasticity. Homoscedasticity was evaluated by plotting the residuals against the predicted values. The assumption of homoscedasticity is met if the points

appear randomly distributed with a mean of zero and no apparent curvature (Bates et al., 2014; Field, 2017; Osborne & Waters, 2002). The plot suggests that the assumption was met. Figure 3 presents a scatterplot of predicted values and model residuals.

Figure 3

Residuals Scatterplot Testing Homoscedasticity



Multicollinearity. Variance inflation factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. High VIFs indicate increased effects of multicollinearity in the model. VIFs greater than 5 are cause for concern, whereas VIFs of 10 should be considered the maximum upper limit (Menard, 2009). The variables of *agree* Question 2, *often disagree* Question 3 and *disagree* Question 3 had VIF scores over 10 and were subsequently removed from analysis. Table 2 presents the VIF for each predictor in the model.

Table 2*Variance Inflation Factors for Predictor Variables*

Variable	VIF
Intensive employee training and development	2.60
Extensive selection	3.68
Incentive-based pay	2.20
Employees feel connected to other colleagues	
Totally disagree	3.47
Often disagree	2.36
Disagree	1.64
Neither agree nor disagree	2.44
Agree	2.25
Often agree	1.67
Employees trust colleagues to lend them a hand if they need it	
Totally disagree	6.40
Often disagree	2.47
Disagree	1.46
Neither agree nor disagree	2.80
Often agree	2.68
Employees can rely on other colleagues when they need support in their work	
Totally disagree	4.04
Neither agree nor disagree	1.90
Agree	2.30
Often agree	2.15

Outliers. To identify influential points, Cooks distances were calculated and assessed. An outlier was defined as any value over the 50th percentile (Cook, 1977). There were no outliers present in the data.

Inferential Results. The results of the regression model were significant, $F(18,106) = 9.27, p < .001, R^2 = .61$, indicating that approximately 61.2% of the variance in VI is explainable by the human capital subscales and relational capital questions combined. Specifically, incentive-based pay significantly predicted VI, $B = 0.40, t(106) = 2.65, p = .009$. This indicates that on average, a one-unit increase of incentive-based pay will increase the value of VI by 0.40 units. Additionally, the category of *totally disagree* for the relational capital Question 1 (employees feel connected to other colleagues) significantly predicted VI, $B = -3.99, t(106) = -3.11, p = .002$. This indicates that on average, a one-unit increase of *totally disagree* for this question will decrease the value of VI by 3.99 units. Finally, the category of *disagree* for the relational capital Question 2 (employees trust colleagues to lend them a hand if they need it) significantly predicted VI, $B = -1.21, t(106) = -2.27, p = .025$. Specifically, the human capital subscale of incentive-based pay, the *totally disagree* category of the first relational capital question, and the *disagree* category of relational capital Question 3 significantly predicted the employee engagement subscale of VI. This suggests that for every one unit increase in the disagree category for this question will result in a decrease of VI by 1.21 units. Table 3 summarizes the results of the regression model.

Table 3

Results for Linear Regression With Human Capital Subscales and Relational Capital Questions Predicting Vigor (VI)

Variable	B	SE	β	t	p
(Intercept)	-0.58	0.45	0.00	-1.30	.196
Intensive employee training and development	0.42	0.16	0.27	2.58	.142
Extensive selection	0.38	0.20	0.23	1.91	.094
Incentive-based pay	0.40	0.15	0.25	2.65	.009
Employees feel connected to other colleagues (ref cat. Totally agree)					
Totally disagree	-3.99	1.28	-0.35	-3.11	.002
Often disagree	-1.26	1.49	-0.79	-0.85	.399
Disagree	0.13	0.45	0.02	0.29	.772
Neither agree nor disagree	-0.38	0.37	-0.09	-1.01	.317
Agree	-0.18	0.24	-0.06	-0.64	.525
Employees trust colleagues to lend them a hand if they need it (ref cat. Totally agree)					
Totally disagree	2.11	1.43	0.23	1.48	.142
Often disagree	1.09	1.08	0.09	1.01	.317
Disagree	-1.21	0.53	-0.16	-2.27	.025
Neither agree nor disagree	-0.44	0.40	-0.11	-1.08	.283
Often agree	-0.38	0.29	-0.13	-1.33	.185
Employees can rely on other colleagues when they need support in their work (ref cat. Totally agree)					
Totally disagree	-0.07	0.99	-0.01	-0.07	.944
Neither agree nor disagree	-0.80	0.46	-0.14	-1.73	.086
Agree	0.18	0.32	0.05	0.57	.567
Often agree	0.23	0.26	0.08	0.88	.382

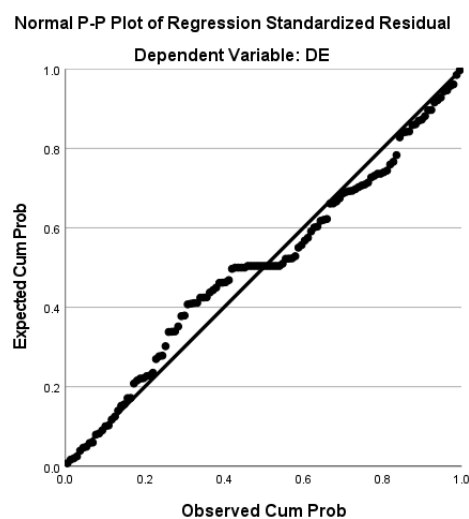
DE

The second regression analysis was conducted to assess whether the human capital subscales and relational capital questions significantly predicted the employee engagement subscale of DE. Prior to the analysis, the assumptions of normality, homoscedasticity, multicollinearity, and lack of outliers were assessed.

Normality. The assumption of normality was assessed by plotting a P-P scatterplot (see DeCarlo, 1997). The plot suggests that the assumption was met. Figure 4 presents a P-P scatterplot of the model residuals.

Figure 4

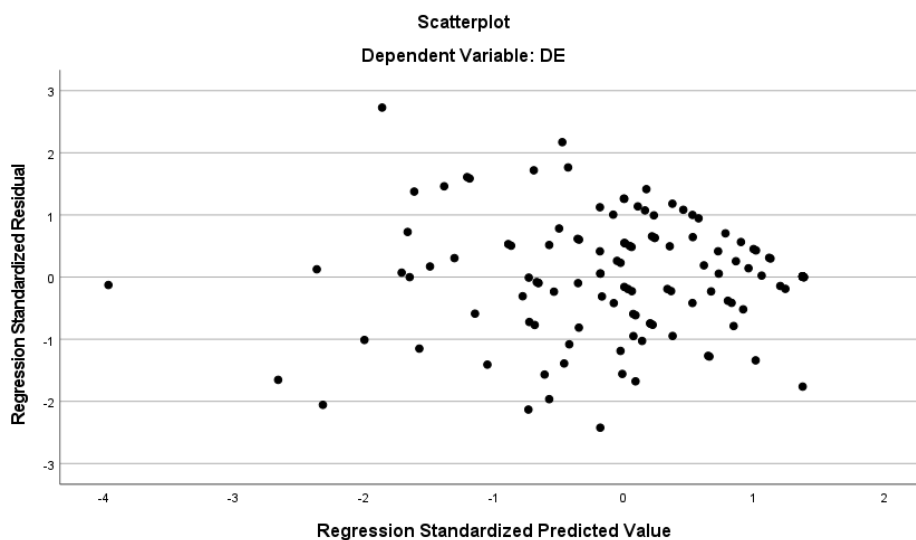
P-P Scatterplot for Normality of the Residuals for the Regression Model



Homoscedasticity. Homoscedasticity was evaluated by plotting the residuals against the predicted values (see Bates et al., 2014; Field, 2017; Osborne & Waters, 2002). The plot suggests that the assumption was met. Figure 5 presents a scatterplot of predicted values and model residuals.

Figure 5

Residuals Scatterplot Testing Homoscedasticity



Multicollinearity. VIFs were calculated to detect the presence of multicollinearity between predictors. High VIFs indicate increased effects of multicollinearity in the model. The variables of *agree* Question 2, *often disagree* Question 3, and *disagree* Question 3 had VIF scores over 10 and were subsequently removed from analysis. Table 4 presents the VIF for each predictor in the model.

Table 4*Variance Inflation Factors for Predictor Variables*

Variable	VIF
Intensive employee training and development	2.60
Extensive selection	3.68
Incentive-based pay	2.20
Employees feel connected to other colleagues	
Totally disagree	3.47
Often disagree	2.36
Disagree	1.64
Neither agree nor disagree	2.44
Agree	2.25
Often agree	1.67
Employees trust colleagues to lend them a hand if they need it	
Totally disagree	6.40
Often disagree	2.47
Disagree	1.46
Neither agree nor disagree	2.80
Often agree	2.68
Employees can rely on other colleagues when they need support in their work	
Totally disagree	4.04
Neither agree nor disagree	1.90
Agree	2.30
Often agree	2.15

Outliers. To identify influential points, Cooks distances were calculated and assessed. An outlier was defined as any value over the 50thth percentile (Cook, 1977). There were no outliers present in the data.

Inferential Results. The results of the linear regression model were significant, $F(18,106) = 9.43, p < .001, R^2 = .61$, indicating that approximately 61.60% of the variance in dedication (DE) is explainable by the human capital subscales and relational capital questions combined. Intensive employee training and development significantly predicted DE, $B = 0.60, t(106) = 3.71, p = 0.31$. This indicates that on average, a one-unit increase of intensive employee training and development will increase the value of DE by 0.60 units. The *Totally disagree* category of relational capital question 1 significantly predicted DE, $B = -4.32, t(106) = -3.46, p < .001$. This suggests that for every one unit increase in the totally disagree category will decrease the value of 4.32 units. Finally, the *Neither agree nor disagree* category of relational capital question 3 significantly predicted DE, $B = -1.27, t(106) = -2.83, p = .006$. Specifically, the human capital subscale of incentive-based pay, the *Totally disagree* category of the first relational capital question, and the *Disagree* category of relational capital question 3 significantly predicted the employee engagement subscale of dedication. This finding indicates that for every one unit increase in the category will decrease the value of DE by 1.27. Table 5 summarizes the results of the regression model.

Table 5

Results for Linear Regression With Human Capital Subscales and Relational Capital Questions Predicting Dedication (DE)

Variable	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
(Intercept)	-0.15	0.44	0.00	-0.33	.741
Intensive employee training and development	0.60	0.16	0.39	3.71	.031
Extensive selection	0.44	0.20	0.27	2.21	.070
Incentive based pay	0.16	0.15	0.11	1.10	.273
Employees feel connected to other colleagues (ref cat. Totally agree)					
Totally disagree	-4.31	1.25	-0.39	-3.46	<.001
Often disagree	-2.31	1.45	-0.15	-1.59	.115
Disagree	-0.12	0.44	-0.02	-0.27	.787
Neither agree nor disagree	-0.45	0.36	-1.16	-1.23	.220
Agree	-0.16	0.28	-0.05	-0.58	.564
Often agree	-0.14	0.28	-0.04	-0.52	.605
Employees trust colleagues to lend them a hand if they need it (ref cat. Totally agree)					
Totally disagree	1.71	1.39	0.19	1.23	.222
Often disagree	0.86	1.05	0.07	0.81	.419
Disagree	-0.55	0.51	-0.07	-1.07	.289
Neither agree nor disagree	-0.26	0.39	-0.07	-0.66	.507
Often agree	-0.40	0.28	-0.14	-1.45	.151
Employees can rely on other colleagues when they need support in their work (ref cat. Totally agree)					
Totally disagree	0.13	0.96	0.02	0.14	.888
Neither agree nor disagree	-1.27	0.45	-0.24	-2.83	.006
Often agree	0.08	0.31	0.02	0.25	.802
Agree	-0.11	0.26	-0.39	-0.44	.657

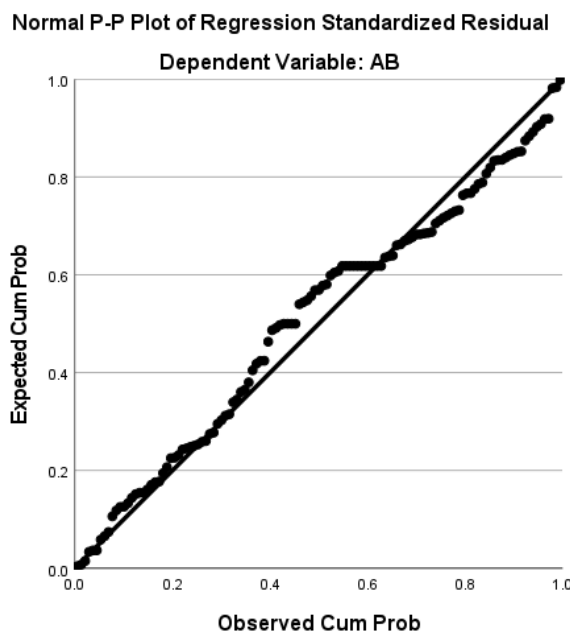
AB

The final regression analysis was to assess whether the human capital subscales and relational capital questions significantly predicted AB. Prior to the analysis, the assumptions of normality, homoscedasticity, multicollinearity, and lack of outliers were assessed.

Normality. The assumption of normality was assessed by plotting a P-P scatterplot (DeCarlo, 1997). The plot suggests that the assumption was met. Figure 6 presents a P-P scatterplot of the model residuals.

Figure 6

Scatterplot for Normality of the Residuals for the Regression Model

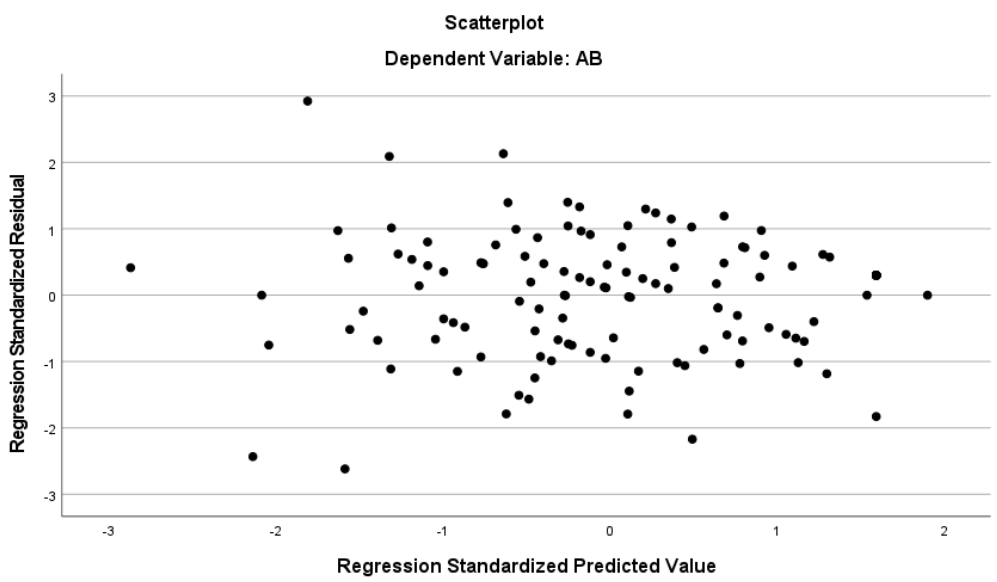


Homoscedasticity. Homoscedasticity was evaluated by plotting the residuals against the predicted values (Bates et al., 2014; Field, 2017; Osborne & Waters, 2002).

The plot suggests that the assumption was met. Figure 7 presents a scatterplot of predicted values and model residuals.

Figure 7

Residuals Scatterplot Testing Homoscedasticity



Multicollinearity. VIFs were calculated to detect the presence of multicollinearity between predictors. The variables of Agree question 2, often disagree question 3 and disagree question three had VIF scores over 10 and were subsequently removed from analysis. Table 6 presents the VIF for each predictor in the model.

Table 6*Variance Inflation Factors for Predictor Variables*

Variable	VIF
Intensive employee training and development	2.60
Extensive selection	3.68
Incentive-based pay	2.20
Employees feel connected to other colleagues	
Totally disagree	3.46
Often disagree	2.35
Disagree	1.64
Neither agree nor disagree	2.44
Agree	2.25
Often agree	1.67
Employees trust colleagues to lend them a hand if they need it	
Totally disagree	6.40
Often disagree	2.47
Disagree	1.46
Neither agree nor disagree	2.80
Often agree	2.68
Employees can rely on other colleagues when they need support in their work	
Totally disagree	4.04
Neither agree nor disagree	1.90
Agree	2.29
Often agree	2.15

Outliers. To identify influential points, Cooks distances were calculated and assessed. An outlier was defined as any value over the 50th percentile (Cook, 1977). There were no outliers present in the data.

Inferential Results. The results of the linear regression model were significant, $F(18,106) = 6.61, p < .001, R^2 = .53$, indicating that approximately 52.9% of the variance in AB is explainable the human capital subscales and relational capital questions combined. Incentive-based pay significantly predicted AB, $B = 0.38, t(106) = 2.19, p = .031$. This indicates that on average, a one-unit increase of incentive-based pay will increase the value of AB by 0.38 units. Additionally, the *Often disagree* category for the first relational capital question 1 significantly predicted AB, $B = -3.17, t(106) = -2.20, p = .030$. Specifically, the human capital subscale of incentive-based pay, the *Totally disagree* category of the first relational capital question, and the *Disagree* category of relational capital question 3 significantly predicted the employee engagement subscale of absorption. This indicates that on average, a one unit increase in the *Often disagree* category will decrease AB by 3.17 units. Table 7 summarizes the results of the regression model.

Table 7

Results for Linear Regression With Human Capital Subscales and Relational Capital Questions Predicting Absorption (AB)

Variable	B	SE	β	t	p
(Intercept)	0.32	0.42	0.00	0.77	.444
Intensive employee training and development	0.38	0.17	0.24	2.19	.031
Extensive selection	0.38	0.21	0.24	1.83	.070
Incentive-based pay	0.10	0.14	0.06	0.66	.510
Employees feel connected to other colleagues (ref cat. Totally agree)					
Totally disagree	-4.32	1.25	-0.39	-3.46	<.001
Often disagree	-3.17	1.45	-0.47	-2.20	.030
Disagree	-0.12	0.44	-0.02	-0.27	.787
Neither agree nor disagree	-0.45	0.37	-0.12	-1.23	.220
Agree	-0.15	0.28	-0.05	-0.58	.564
Often agree	-0.14	0.28	-0.04	-0.52	.605
Employees trust colleagues to lend them a hand if they need it (ref cat. Totally agree)					
Totally disagree	1.71	1.39	0.19	1.23	.222
Often disagree	0.86	1.05	0.08	0.81	.419
Disagree	-0.55	0.52	-0.08	-1.07	.289
Neither agree nor disagree	-0.26	0.39	-0.07	-0.66	.507
Often agree	-0.40	0.28	-0.14	-1.45	.151
Employees can rely on other colleagues when they need support in their work (ref cat. Totally agree)					
Totally disagree	0.14	0.96	0.02	0.14	.888
Neither agree nor disagree	-1.27	0.44	-0.23	-2.83	.006
Agree	0.08	0.31	0.02	0.25	.802
Often agree	-0.11	0.26	-0.04	-0.44	.657

Descriptive Statistics

Means and standard deviations were calculated for the scale variable subscales (human capital and work engagement). For the human capital subscales, the observations for intensive employee training and development had an average of 3.94 ($SD = 0.91$). The observations for extensive selection had an average of 3.78 ($SD = 0.88$). Finally, the observations for incentive-based pay had an average of 3.76 ($SD = 0.91$). For the work engagement subscales, the observations for vigor had an average of 4.27 ($SD = 1.44$). The observations for dedication had an average of 4.48 ($SD = 1.40$), while the observations for absorption had an average of 4.25 ($SD = 1.27$). The summary statistics, including means and standard deviations can be found in Table 8.

Table 8*Summary Statistics Table for Interval and Ratio Variables*

Variable	<i>M</i>	<i>SD</i>	<i>N</i>
Human capital			
Intensive employee training and development	3.94	0.91	125
Extensive selection	3.78	0.88	125
Incentive-based pay	3.76	0.91	125
Work engagement			
Vigor- VI	4.27	1.44	125
Dedication- DE	4.48	1.40	125
Absorption- AB	4.25	1.27	125

Additional frequencies and percentages were calculated for each categorical variable (relational capital questions). The most frequently observed category for the question of employees feel connected to other colleagues was, *Agree* (29.60%). The most frequently observed category of the question employees trusts colleagues to lend them a hand if they need it was, *Often agree* (44.00%). Finally, the most frequently observed category for the question employees can rely on other colleagues when they need support in their work was, *Often agree* (36.00%). Frequencies and percentages are presented in Table 9.

Table 9*Frequency Table for Relational Capital Questions*

Variable	<i>n</i>	%
Employees feel connected to other colleagues		
Neither agree nor disagree	19	15.20
Totally agree	34	27.20
Disagree	8	6.40
Agree	37	29.60
Often agree	24	19.20
Totally disagree	2	1.60
Often disagree	1	0.80
Employees trust colleagues to lend them a hand if they need it		
Neither agree nor disagree	19	15.20
Totally agree	41	32.80
Often agree	55	44.00
Often disagree	2	1.60
Totally disagree	3	2.40
Disagree	5	4.00
Employees can rely on other colleagues when they need support in their work		
Agree	27	21.60
Totally agree	40	32.00
Often agree	45	36.00
Neither agree nor disagree	9	7.20
Totally disagree	4	3.20

Reliability Analysis

Six Cronbach alpha coefficients were calculated for the Human capital subscales of intensive training and development, extensive selection, and incentive-based pay, as well as for the employee engagement subscales of VI, DE, and AB. The Cronbach's alpha coefficient was evaluated using the guidelines suggested by George and Mallery (2018) where $> .9$ excellent, $> .8$ good, $> .7$ acceptable, $> .6$ questionable, $> .5$ poor, and $\leq .5$ unacceptable. All the items had alpha scores over $.77$, indicating acceptable and good levels of reliability. See Table 10 for reliability results.

Table 10

Reliability Table for Scale Variables

Scale	No. of Items	α	Lower Bound	Upper Bound
Intensive training and development	3	.85	.82	.89
Extensive selection	3	.82	.77	.86
Incentive-based pay	3	.77	.71	.83
VI	3	.87	.84	.90
DE	3	.90	.88	.93
AB	3	.76	.69	.82

Note. VI = vigor; DE = dedication; AB = absorption.

Analysis Summary

The purpose of this quantitative correlational study was to determine if there was a predictive relationship of possessive scores for a human capital and relational capital questionnaire on employee engagement in the digital workplace. Prior to analysis, scale level composite scores were calculated for the three human capital subscales as well as the three employee engagement subscales. Additionally, summary statistics were calculated and presented for all the variables of interest.

Three multiple linear regression analyses were run with each of the three employee engagement subscales as the dependent variable. For each analysis, the assumptions of normality, homoscedasticity, multicollinearity, and lack of outliers were assessed and met. The first regression was run with Vigor (VI) as the dependent variable.

The results of the first regression suggested that there was a significant predictive relationship of the human capital subscales and relational capital questions collectively on vigor. Specifically, the human capital subscale of incentive-based pay, the *totally disagree* category of the first relational capital question, and the *disagree* category of relational capital question 3 significantly predicted the employee engagement subscale of vigor.

The second regression was run with Dedication (DE) as the dependent variable. The results of the regression suggested that there was a significant predictive relationship of the human capital subscales and relational capital questions collectively on dedication. Specifically, the human capital subscale of intensive training and development, the *Totally disagree* category of the first relational capital question, and *Neither agree nor*

disagree category of relational capital question 3 significantly predicted participants scores on dedication.

Finally, the third regression was run with Absorption (AB) as the dependent variable. The results of the final regression suggested that there was a significant predictive relationship of the human capital subscales and relational capital questions collectively on absorption. Specifically, the human capital subscale of incentive-based pay and the *Often disagree* category for the first relational capital question. The findings of this study confirm the research conducted by Reissova and Papay (2021). They found a high employee engagement is associated with high work performance and is the center of attention for human resources managers. Additionally, the findings from this study support research on the relationship between organizational commitment and life satisfaction (Polo-Vargas et al., 2017). The findings of this study support the JD-R theory, developed by Demerouti et al. (2001), by supporting an employee's need for acceptance.

Applications to Professional Practice

The objective of this study was to determine the potential relationship between human capital, relational capital, and work engagement in a digital industry to fail or reject the null hypothesis. The findings led to rejecting the null hypothesis because a statistically significant relationship exists between human capital and relational capital and work engagement. The findings could help technology leaders with the knowledge and data to improve employee development activities to improve leader interaction and the overall well-being of employees and stimulate creativity within organizations.

The findings of this study are relevant for employee involvement as a principal factor influencing enthusiasm to lead the organization. Leader interaction with human capital could assess factors for improving employee satisfaction, increasing business profitability, and fostering a culture of employee inclusion. Additionally, leaders could understand the importance of interaction, and the development of human relationships will improve the overall health and well-being of the organization.

Implications for Social Change

The implications for positive social change include the potential for information technology leaders to focus on the stimuli and well-being of employees through intangible assets of employee development programs by providing self-efficacy for career development, career growth, engagement, and performance achievements. Dumay (2016) emphasizes the importance of human capital impact that poses a challenge for corporate leaders to embrace value much more than profits. When employees are engaged, encouraged, and doing meaningful work, they are more likely to make the most of their talents and contribute to their communities and society. Societal relationships will merit attention from private to public organizations, allowing employee engagement to reach individual potential and ensure societal benefits.

Recommendations for Action

The findings from this study demonstrate employee involvement is a principal factor influencing enthusiasm to lead the organization. This study's findings substantiate the company's business model to evaluate the individual behavior of the organization's human capital to determine its competitive advantage. Prior research began to reflect the

benefits and interaction of an organization's human capital as leverage to its advantage (Lin, 2011). The company's model has also been used to examine the factor and trust theories and differentiates organizational qualities and beliefs (Zhilenkova et al., 2019). The loss of highly skilled workers in technology organizations could affect several components, such as incentive-based pay, intensive training and development, decreasing employee enthusiasm, and losing human capital resulting in negative company profits, and competitive advantage.

Recruiting and maintaining resources is not a unique concept; however, it may be a new reflection of understanding to leaders of how employees share different perspectives that foster their engagement. Interaction between leaders and employees is simpler to do rather than to plan. Technology leaders need to understand the availability of infinite resources within their organization. A comprehensive recommendation for action could involve the interaction of employees engaging with leaders, increasing creative thinking relationships, and building an environment that embraces new ideas for employee exploration and growth. I plan to submit an article for publication in the *Journal of Intellectual Capital*, and propose to submit findings at the Atlanta Human Capital Institute conference.

Recommendations for Further Research

Recommendations for further research should include examining the relationships between interpersonal relationships, career maximization, and leader interactions with technology employees, an innovation reaching across most industries. The targeted population was information technology employees and managers in the Metropolitan

Atlanta area. Therefore, the study findings was geographically focused in specific region. Although work engagement was specific to particular industry, human capital and innovation is connected across many industries.

Additionally, online surveys may reach more participants; personal interviews may produce value to improve the study by identifying best practices within the organization or region. Direct interface with employees and leaders could better highlight the benefits of human capital. Furthermore, leaders within organizations may provide external access for the employee voice to be heard and gain insight into more specific solutions to organizational-unique problems.

Reflections

This journey was begun to better understand the entrepreneurial insight of corporate interpersonal problems, and why employees respond to specific workplace circumstances. Through research, my journey offered additional insight to the understanding to employee behavior and why they respond in the matter of their environment. As the workforce entered the pandemic, the environment changed causing the workforce to adjust requiring organization to react to the demands.

Conclusion

The purpose of this quantitative correlation study was to examine the relationship between human capital, relational capital, and work engagement. This study used SPSS version 27 to test the research question by SPSS analyzing the descriptive statistics, test assumptions, and perform a linear regression analysis. The findings revealed that employee work engagement positively correlated to both independent variables.

Examining the results of this research is significant because direct line leaders and managers do lack in understanding the relationship between the value of human capital, relational capital, and work engagement. The overall results of this study show a need for attention in the implementation of employees' thoughts and ideas.

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Appendix A: Participation Invitation Letter

Dear Potential Participant,

My name is Royelle D. Comer. I am a doctoral student at Walden University's Doctor of Business Administration program. I am kindly requesting your participation in a doctoral research study that I am conducting. The intention of this research is to examine the possible relationships between human capital, relational capital, and employee engagement. The study will collect data based upon collaboration among employees relating to each other, their leaders, and their environment. I am inviting the U.S. technical managers and employees who belong to the technology industry to participate in this study. If you would like to participate in the study, please click on the link below:

https://www.surveymonkey.com/create/?sm=2B2BCkGXqgLVzRxJol0OWxASMyxphCw8VrtpptoT4n4ql3D&tbyb_collect=true

Appendix B: Human Capital Investment Index

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Intensive employee training and development

1. _____ This organization provides employees with a variety of training and development opportunities.
2. _____ This organization spends much money on employee training and development.
3. _____ This organization provides employee with structured formal training and development programs.

Extensive selection

4. _____ This organization selects people according to highly refined selection criteria and procedures.
5. _____ This organization hires people by utilizing different kinds of selection tools (interviews, aptitude test, written examination, etc.).
6. _____ This organization spends much money to select right people.

Incentive-based pay

7. _____ This organization bases pay raise decisions on employee performance.
8. _____ This organization has wide range in pay within a same job grade.
9. _____ This organization extensively utilizes a company-wide profit-sharing and/or a gain-sharing program.
10. _____ This organization utilizes seniority-based rewards practices.

Fit indices w^2

df w^2 /df GFI CFI IFI

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Appendix D: Work and Well-Being Survey (UWES)

The following 9 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the “0” (zero) in the space after the statement. If you have had this feeling, indicate how often you felt it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

Never 0	Almost Never 1	Rarely 2	Sometimes 3	Often 4	Very Often 5	Always 6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

1. _____ At my work, I feel bursting with energy.a (VI1)
2. _____ I find the work that I do full of meaning and purpose. (DE1)
3. _____ Time flies when I am working. (AB1)
4. _____ At my job, I feel strong and vigorous.a (VI2)
5. _____ I am enthusiastic about my job.a (DE2)
6. _____ When I am working, I forget everything else around me. (AB2)
7. _____ My job inspires me.a (DE3)
8. _____ When I get up in the morning, I feel like going to work.a (VI3)
9. _____ I feel happy when I am working intensely.a (AB3)

Source: Schaufeli and Bakker (2003).

Note: VI = Vigor scale; DE = Dedication scale; AB = Absorption scale.

a. Shortened version (Utrecht Work Engagement Scale–9 [UWES-9]).