

**THE IMPACT OF MEANINGFUL WORK ON INNOVATIVE WORK BEHAVIOR
MEDIATED THROUGH EMPLOYEE ENGAGEMENT**

by

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Abstract

The purpose of this study is to examine the impact of meaningful work on innovative work behavior (IWB) mediated through employee engagement. Previous researchers have determined the relationship between meaningful work and IWB, meaningful work and employee engagement, and IWB and employee engagement. In contrast, this research aims to determine the impact of meaningful work on employee engagement, which, in turn, affects IWB. This study will be the first to depict a mediated model in which employee engagement influences the relationship between meaningful work and IWB as viewed through the lens of the expectancy theory. This study will answer the research question: What is the impact of meaningful work on IWB mediated through employee engagement? The quantitative correlational methodology will measure the variables in meaningful work, employee engagement, and IWB. The population for this study included engineers with at least three years of experience working in engineering firms in the United States. A sample of 98 engineers with at least three years working experience participated in the study. The study's findings showed a statistically significant correlation between meaningful work and IWB mediated through employee engagement. These findings will provide organizational leaders with insights into the relationship between meaningful work, IWB, and employee engagement, thereby increasing organizations' innovation.

Dedication

This dissertation is dedicated to my loving wife, Odilliah Shibale, whose encouragement, support and motivation immensely contributed this milestone in my life. I also thank my wife for taking more family responsibilities, staying up late to provide the much-needed company, and taking care of (and attending) all the dissertation research seminar logistics. This dissertation is also dedicated to my children Portney, Palca and Briskans Shibale for their encouragement.

I would also like to dedicate this dissertation to my late father, Alfayo Mbuni, and my late mother, Diana Mwenesi, who instilled in me the value of education and the drive to succeed in educational pursuits. I am sure my parents would have been overjoyed if they were here with us today. Each one of you hold a special place in my heart and your patience and encouragement made this achievement possible. Thank you very much everyone.

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CHAPTER 1. INTRODUCTION

The purpose of this dissertation was to examine the impact of meaningful work on innovative work behavior (IWB) mediated through employee engagement. Meaningful work is the degree to which the employee experiences the job as generally meaningful, valuable, and worthwhile (Hackman & Oldham, 1975; Steger et al., 2012). IWB is described as employees' actions in creating, applying, and executing, original ideas, processes, procedures, and products (Khar Kheng et al., 2013; Zaidi et al., 2017). As reported by Schaufeli et al. (2002), employee engagement is a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption. In this description of employee engagement, vigor denotes employees' persistence, mental resilience, and energy feelings. Dedication manifests in experiencing a sense of significance, challenge, pride, and high involvement in one's work. Absorption refers to an employee who is thoroughly captivated at work and characterized by an unimpaired sense of time (Orth & Volmer, 2017).

The study to examine the correlation between meaningful work, IWB, and employee engagement was vital because, as stated in Zaidi et al. (2017), innovation is dependent on IWB. Afsar et al. (2016) asserted that the skills, knowledge, and experience possessed by an individual or population in a corporation foster the firm's success through their innovation initiatives. The capability of knowledge generation and innovation through employees determines a firm's competitive position (Markova & Ford, 2011). Innovation through employees who leverage creativity and invention is a powerful source in sustaining any firm's survival and success (Markova & Ford, 2011). Zaidi et al. (2017) suggested that the success of innovation through employees can only be a source of business triumph if employees are ready and willing to

commit time in solving challenging tasks, using their various abilities, and sharing their know-how.

The study is advantageous to corporate leaders because it provides new insights that can sustain or boost competition by attaining a point of difference within their chosen market (Mazzarol et al., 2014). Also, by identifying what meaningful work represents, this research proposed that organizational leaders ought to be involved in influencing employees' perceptions of meaningful work to expedite IWB. Chapter 1 of this dissertation will discuss the (a) background of the problem, (b) statement of the problem, (c) purpose, (d) significance, (e) research questions, (f) research design, (g) assumptions, and (h) limitations.

Background of the Problem

The topic for this study was innovation. As reported by Dougherty and Clarke (2017), innovation refers to the initiation of beneficial conceptions, techniques, commodities, strategies, and methods with the expected result of creating societal, environmental, or monetary benefits. It involves integrating both dimensions of the creative process to transform new ideas into viable products required by individuals to ensure sustainable growth (Buta, 2019). Innovation is dependent on IWB (Zaidi et al., 2017), described as employees' actions in the creation, application, and execution of original ideas, processes, procedures, and products (Khar Kheng et al., 2013; Zaidi et al., 2017). Several factors influence IWB, and scholarly literature suggests that work engagement positively predicts IWB (Orth & Volmer, 2017). Also, employees' intrinsic and extrinsic motivation stimulate employees' IWB (Jaaffar et al., 2018). According to Cai et al. (2018), servant leadership positively influenced meaningful work, which positively impacted IWB. It is necessary to identify factors that are likely to increase IWB since it is an essential source of an organization's competitive advantage (Shin et al., 2016).

Shin et al. (2016) theorized and tested conditions under which perceived innovation job requirements increased IWB. Using data consisting of 311 employee–supervisor pairs from two companies, the researchers found that perceived innovation job requirements had a more positive relationship with IWB for employees with a low intrinsic interest in innovation than those with high intrinsic interest (Shin et al., 2016). Similarly, Sameer (2018) examined the link between positive psychological capital and innovative behavior and the relationship between innovative behavior and job satisfaction and engagement. This study found that psychological capital, with its four components of hope, optimism, resilience, and efficacy, predicted IWB, which affected job satisfaction and employee engagement (Sameer, 2018). This study examined the correlation between meaningful work, employee engagement, and IWB through the lens of expectancy theory.

The study provided new knowledge to corporate leaders on the link between IWB, meaningful work, and employee engagement. The new knowledge will likely enhance workers' innovation. As reported by Yan et al. (2018), companies regard workers as essential partners in innovation. The study also advanced the expectancy theory by providing new knowledge on the link between IWB and meaningful work and employee engagement.

Researcher Interest

The interest to perform research into the topic of innovation originated from corporations whose sustainability was threatened by the developments of Information Technology (IT). In some corporations, IT advancement meant that machines and robots would perform some of the tasks previously performed by employees. In other corporations, IT advancement meant reduced annual income because competitors provided a high quality of goods for a lower price. For example, improvement in IT, combined with the expansion of hand-held internet devices,

threaten traditional brick and mortar stores' survival because more customers make online purchases. The same threat applies to the conventional brick and mortar school since someone can obtain cheaper high-quality education through online classes.

Therefore, these corporations threatened with extinction must innovatively design methods to evade the catastrophe. Since corporations consider employees the most critical innovation partners (Yan et al., 2018), this study examined the impact of meaningful work on IWB mediated through employee engagement. This study's findings are essential in providing corporate leaders with insights on the correlation between meaningful work, IWB, and employee engagement with the likelihood of enhancing innovation in organizations. As reported by Pradhan and Jena (2019), employees' IWB significantly influences organizational survival and effectiveness, leading to sustainable corporate development.

Theoretical Framework

The quantitative design correlational research methodology utilized the expectancy theory foundation to examine the relationship between meaningful work, IWB, and employee engagement. Lloyd and Mertens (2018) asserted that Vroom defined expectancy as the individualized likelihood of action or effort, leading to a consequence or performance. In this context, the foundation of expectancy theory relies on the assumption that people have choices, and they make selections based on the option they believe will lead to the best personal outcome (Lloyd & Mertens, 2018). Expectancy is the employees' awareness that exerting effort to accomplish specific job-related tasks will lead to specific performance. It is the degree to which employees' trust that their abilities will lead them to achieve work-related objectives (Lloyd & Mertens, 2018). In this regard, this research's theoretical framework relied on the premise that employees have varied options, and they make decisions based on the option they believe will

lead to the best personal outcome (Lloyd & Mertens, 2018). Prior scholars have utilized the expectancy theory framework to investigate various employee-related constructs (Barba-Sánchez & Atienza-Sahuquillo, 2017). Also, existing research has focused on the relationship between meaningful work and IWB (Cai et al., 2018), meaningful work, and employee engagement (Hoole & Bonnema, 2015), or IWB and employee engagement (Orth & Volmer, 2017). This study utilized the expectancy theory framework to extend the body of research by understanding the relationship between meaningful work and IWB mediated through employee engagement.

Statement of the Problem

The research literature on the topical area suggests that innovation involves integrating both dimensions of the creative process to transform known or new ideas into viable products required by individuals to ensure sustainable growth (Buta, 2019). Innovation is dependent on IWB, described as the action of employees in the creation, application, and execution of original ideas, processes, procedures, and products (Khar Kheng et al., 2013; Zaidi et al., 2017). The literature on the research topic indicates that employees who experience meaningful work are intrinsically motivated (Amabile & Pratt, 2016). Consequently, they show a positive attitude in innovatively addressing challenges and problems (Yidong & Xinxin, 2013).

Similarly, Hoole and Bonnema (2015) suggested a relationship between employee engagement and meaningful work since the affective component of engagement presents a link with the search for meaning and purpose. Hoole and Bonnema (2015) suggested that employees make every effort to find meaning in life and work, and they are likely to experience heightened engagement as soon as they find satisfaction from a professional perspective. As reported by Hirschi (2012), work meaningfulness can nurture an environment where engagement levels

would be higher. Meaningfulness contributes to a positive attitude towards work and can lead to higher engagement levels (Hoole & Bonnema, 2015).

Further, Schaufeli et al. (2002) suggested that the concept of employee engagement has three-dimensions that include vigor (employees' mental resilience and persistence), dedication (experiencing a high level of involvement in one's work), and absorption (being fully immersed at one's work). As stated in Shirom (2011), the vigor constituent of work engagement conceptually coincides with resilience. Since IWB may require trial and error behavior, more fully engaged employees are more likely to show IWB.

Although researchers have determined the relationship between meaningful work and IWB, meaningful work and employee engagement, and IWB and employee engagement, we do not have a study that investigated the relationship between meaningful work, employee engagement, and IWB. Therefore, this research examined the impact of meaningful work on IWB mediated through employee engagement.

Purpose of the Study

The study aimed to provide new knowledge to corporate leaders on the link between IWB, meaningful work, and employee engagement. The new knowledge will likely enhance workers' innovation since, according to Buta (2019), innovation involves integrating both dimensions of the creative process to transform known or new ideas into viable products required by individuals to ensure sustainable growth. Yan et al. (2018) suggested that companies regard workers as essential partners in innovation. The study will also be beneficial to corporate leaders since new insights involve changes that potentially maintain or improve competitiveness by securing a point of difference within its chosen market (Mazzarol et al., 2014).

The purpose of this quantitative design correlational research was to examine the impact of meaningful work on IWB mediated through employee engagement. Expectancy theory as it relates to meaningful work, IWB, and employee engagement was applied in this study. The instrument for measuring meaningful work was the Work and Meaning Inventory (Steger et al., 2012), while the instrument for measuring IWB was the five-point Likert scale with the six items as published in Scott and Bruce (1994). The Utrecht Work Engagement Scale measured employee engagement (Schaufeli et al., 2002). The target population for this study were engineers with at least three years' experience working in engineering firms in the United States.

There were three constructs in this study which included (a) meaningful work that refers to the degree to which the employee experiences the job as generally meaningful, valuable, and worthwhile (Hackman & Oldham, 1975; Steger et al., 2012), (b) employee engagement which refers to a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption (Schaufeli et al., 2002), and (c) IWB which refers to the action of employees in the creation, application and execution of original ideas, processes, procedures, and products (Khar Kheng et al., 2013; Zaidi et al., 2017).

Significance of the Study

The research contributed to understanding the relationship between meaningful work, employee engagement, and IWB, as viewed through the expectancy theory. Preceding researchers determined the relationship between meaningful work and IWB (Cai et al., 2018), meaningful work, and employee engagement (Hoole & Bonnema, 2015), and IWB and employee engagement (Orth, & Volmer, 2017). In contrast, this research aimed to determine the impact of meaningful work on employee engagement, which, in turn, affects IWB. This study was the first to depict a mediated model where employee engagement influences the relationship between

meaningful work and IWB. These findings provide organizational leaders with insights into the relationship between meaningful work, IWB, and employee engagement, thereby increasing organizations' innovation. In the context of innovation in the organization, Yan et al. (2018) contended that firms still consider employees the most crucial innovation partners.

The research advanced the expectancy theory by providing new insights into the relationship between meaningful work and IWB mediated through employee engagement. The innovative process involves integrating both dimensions of the creative process to transform known or new ideas into viable products required by individuals to ensure sustainable growth (Buta, 2019). Subsequently, new insights into the relationship between meaningful work and IWB mediated through employee engagement can facilitate this process. As reported by Schuh et al. (2018), the innovative process begins with employees recognizing a problem, coming up with new ideas or remedies, and adopting methods to operationalize the concepts. The advancement of the expectancy theory through this study is likely to enhance the innovative process.

Further, existing research focused on the relationship between meaningful work and IWB (Cai et al., 2018), meaningful work and employee engagement (Hoole & Bonnema, 2015), or IWB and employee engagement (Orth & Volmer, 2017). This study utilized the expectancy theory to extend the body of knowledge by understanding the relationship between meaningful work and IWB mediated through employee engagement. The knowledge on the relationship between meaningful work and IWB mediated through employee engagement can form a foundation for future research on the constructs that may impact IWB.

Research Questions

The quantitative design correlational research examined the relationship between the variables of meaningful work and IWB mediated through employee engagement. The researcher investigated the following research questions and hypotheses:

- RQ1: What is the impact of meaningful work on IWB mediated through employee engagement of engineers with at least three years of working experience in engineering firms in the United States?
- H₀: There is no statistically significant correlation between meaningful work and IWB mediated through employee engagement.
- H_a: There is a statistically significant correlation between meaningful work and IWB mediated through employee engagement.

Definition of Terms

Absorption. This is a variable characterized by being fully concentrated and happily immersed in own work, where the passage of time is unnoticed, and one has trouble with separating his or her person from the work (Schaufeli et al., 2002).

Dedication. This refers to being deeply engaged in one's work and experiencing importance, excitement, motivation, dignity, and challenge (Schaufeli et al., 2002).

Employee engagement. This refers to a satisfying and positive state of mind related to work which is symbolized by dedication, vigor, and absorption (Schaufeli et al., 2002).

Expectancy theory. This is defined as the individualized likelihood of action or effort, leading to a consequence or performance (Lloyd & Mertens, 2018).

Extrinsic motivation. This refers to people who engage in an activity to obtain some instrumentally separable consequence, such as achieving some valued outcome, attaining a reward, or avoiding punishment (Di Domenico & Ryan, 2017).

Job autonomy. This refers to the flexibility employees possess when determining which tasks to perform and how to schedule, assign, and execute them (Hackman & Oldham, 197; Orth & Volmer, 2017).

Job complexity. This is the extent to which job-related tasks are complicated and challenging to execute. The level of difficulty may demand high-level competencies from the employee. (Morgeson & Humphrey, 2006).

Innovation. This is the initiation of beneficial conceptions, techniques, commodities, strategies, and methods with the expected result of creating societal, environmental, or monetary benefits (Dougherty & Clarke, 2017).

Innovative work behavior. This is the employees' action in creating, applying, and executing original ideas, processes, procedures, and products (Khar Kheng et al., 2013; Zaidi, Yakub et al., 2017).

Instrumentality. This is the perception that a given outcome of performance on employees will lead them to receive anticipated rewards (Lloyd & Mertens, 2018).

Intrinsic motivation. This refers to people's tendency to seek novelty and challenges because they find the activity exciting and inherently satisfying (Di Domenico & Ryan, 2017).

Maslow's hierarchy of needs. This refers to the five universal needs: physiological, safety, love and belonging, esteem, and self-actualization (Lonn & Dantzler, 2011).

Meaningful work. This is the degree to which the employee experiences the job as one which is generally meaningful, valuable, and worthwhile (Hackman & Oldham, 1975; Steger et al., 2012).

Middle-level managers. These are employees with at least three years of work experience whose job responsibilities involve building operating competencies that ensure work progresses seamlessly between various departments by facilitating necessary trade-offs among the diverse parts of any working system (Sayles, 1993). They (middle-level managers) take the initiative, painstakingly working through the required changes in both staff and line functions to produce an improved product or process (Sayles, 1993).

Valence. This refers to the degree to which employees prefer a given outcome (Lloyd & Mertens, 2018).

Vigor. This refers to high energy levels, resilience, and motivation to undertake activities (Brummelhuis & Bakker, 2012).

Research Design

The quantitative design correlational research examined the relationship between the variables of meaningful work, IWB, and employee engagement, as it best expresses the research's intent. This quantitative non-experimental design survey-based approach was appropriate because the constructs in this study are quantifiable (can be analyzed statistically). Also, previous similar studies that investigated the correlation between meaningful work and IWB (Cai et al., 2018), employee engagement and meaningful (Hoole & Bonnema, 2015), and employee engagement and IWB (Orth & Volmer, 2017) utilized the quantitative design. The population for this study were engineers with at least three years' experience working in engineering firms in the United States.

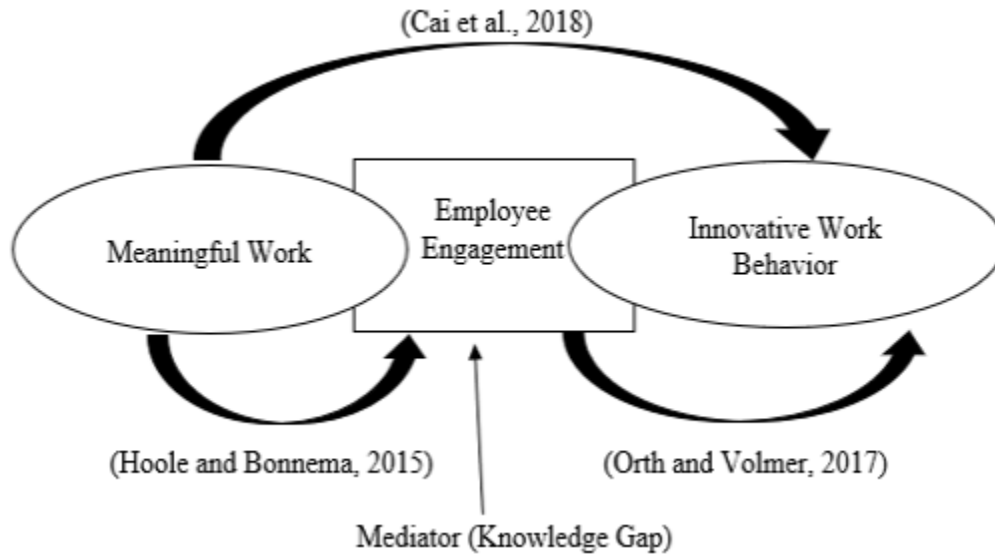
SurveyMonkey, as a third-party, screened and recruited participants based on the inclusion criteria. Also, SurveyMonkey ensured participants signed the informed consent, administered the surveys, and collected data from a sample population from engineers with at least three years' experience working in engineering firms in the United States. SurveyMonkey administered a survey questionnaire consisting of three sections. The questionnaire sections included the six-item Utrecht Work Engagement Scale for measuring work engagement (Schaufeli et al., 2002), the six items as published in Scott and Bruce (1994) for measuring IWB, and the Work and Meaning Inventory (WAMI) instrument for measuring meaningful work (Steger, et al., 2012). A 5-point Likert Scale was used to collect responses from the participants. The Pearson correlation coefficient was used to determine the correlation between the constructs (Field, 2013).

Conceptual Representation

Figure 1 shows the conceptual representation of meaningful work, employee engagement and innovative work behavior. Prior studies have established a positive correlation between meaningful work and employee engagement (Hoole & Bonnema, 2015). Previous studies have also shown a positive correlation between employee engagement and IWB (Orth & Volmer, 2017). Further, previous research suggested that servant leadership had a positive influence on meaningful work, which positively impacted IWB (Cai et al., 2018). This study examined the impact of meaningful work on employee engagement and subsequent impact on IWB.

Figure 1

Conceptual Representation



Assumptions and Limitations

There were several assumptions and limitations that were considered in this quantitative correlation study that aimed to examine the impact of meaningful work on employee engagement, which, in turn, impacts IWB. This section will discuss the description of methodological assumptions. It will also describe the limitations the correlation study.

Assumptions

The study to examine the relationship between meaningful work and IWB mediated through employee engagement had methodological and theoretical assumptions. The study also had assumptions about measures. The section that follows will discuss these assumptions.

General Methodological Assumptions

In finding the relationship between meaningful work and IWB, the study took an epistemology stance that questions the relationship between the knower and what is known, and how we know what we know (Tuli, 2011). The researcher had an objective stance in

developing hypotheses, identifying measurement instruments, identifying sample populations, collecting, analyzing data, and generalizing results. In this quantitative study, the assumption was that the subjects and objects exist separately from their perception of self, and it involves an objective measurement of facts or occurrences (Hathaway, 1995). Objectivity stems from the assumption that the object under study is unrelated to, independent of, separate from, and unaffected by the researcher.

The study assumed a positivist stance where deductive logic with precise empirical observations will find the correlation between the constructs. The positivist paradigm's basic assumption is that the researcher believes in an external reality comprising facts constructed to obey specific laws (Hathaway, 1995). In this positivist paradigm, a study's main objective was to develop the most objective methods possible to get the closest approximation of reality (Tuli, 2011).

Theoretical Assumptions

The study was conducted through the lens of expectancy theory with the assumptions that individuals join a firm with expectations about their desires, motivation and past experiences. These individuals are interested in unique things (salary, medical coverage, social status etc.) from the firm. The other theoretical assumptions are that the individual's behavior is a conscious choice and individuals optimize outcomes by choosing among alternatives.

Assumptions About Measures

The research data analysis assumed that all observations were independent of other observations. Also, the study assumed that the data collected were normally distributed and the variances in the different treatment groups were the same (homogeneity of variance). Further, the study assumed that the relationship between the variables was linear (Field, 2013).

Limitations

The research investigated a small number of engineers working in engineering firms in the United States, which raised concerns over the generalizability of the research findings (Cai et al., 2018). This study's results could not be generalized to include employees in other firms, professions, or countries. The other limitation related to self-reporting responses rather than supervisor-rated employee IWB responses, which are important in objectively reporting responses (Cai et al., 2018). Also, method bias may have influenced the results since participants were requested to respond to three constructs in the same survey simultaneously (Hoole & Bonnema, 2015).

Design Limitations

There were several design limitations in the study. First, the target population for the study included engineers with at least three years of experience working in engineering firms in the United States. The limitation was associated with the improper representation of this target population. Although appropriate sampling procedures were applied, participation in the study depends on the probability that an individual will be selected which can lead to falsity proportions of participants. Second, participants provide responses to survey questionnaires and the researcher is unable to control the study environment. Also, the responses provided by the participants depend on the instantaneous conditions of the participants which could impact the responses. Third, responses to the quantitative study are structured. This limits the information provided by participants. Fourth, the quantitative design requires a lot of time to analyze data since the study requires a large population. Also, the quantitative design involves elaborate statistical analysis, which could be a hinderance for researchers with non- statistical background.

Delimitations

There were several areas that were not covered in the study. These areas included the age and gender of the participants. Also, other factors that might influence IWB were not covered in this study. Further, the study focused on engineers with at least three years of experience working in the United States and all other employees in other fields were not covered in the study.

Organization of the Remainder of the Study

There are four subsequent chapters in this study. Chapter 2 will discuss the (a) literature review, (b) methods searching, (c) theoretical orientation for the study, (d) review of the literature, and (e) research findings. Chapter 3 will discuss (a) methodology, (b) study's purpose, (c) research questions and hypotheses, (d) research design, (e) target population, (f) research procedures, (g) research instruments, and (h) ethical considerations. Chapter 4 will discuss the research results, and Chapter 5 discusses implications and recommendation.

CHAPTER 2. LITERATURE REVIEW

The literature review's primary purpose was to provide a basis for researching the relationship between meaningful work and IWB mediated through employee engagement. The study applied the quantitative design correlational design to examine the impact of meaningful work on IWB mediated through employee engagement as viewed through the expectancy theory. The literature review, as it relates to the expectancy theory within the context of meaningful work, IWB, and employee engagement, provides the foundation of Chapter 2. The rest of Chapter 2 will discuss (a) methods of searching, (b) theoretical orientation of the study, (c) conceptual framework, (d) review of the literature, (e) meaningful work, (f) employee engagement, (g) innovative work behavior, (h) findings, (i) critique of previous research methods, and (j) summary.

Methods of Searching

The library search to identify relevant literature for the study included (a) ProQuest, Sage, (b) SAGE Online, (c) SAGE Knowledge (d) SAGE Research Methods (e) Science Direct, (f) Open Dissertations, (g) Academic Search Premier (h) ACM Digital Library (i) Business Expert Express (j) Business Market Research Collections (k) Directory of Open Access Journals (l) Dissertation at Capella (m) Dissertation and Thesis Global, (n) PsycArticles, (o) Google Scholar, and (p) Business Complete databases. The search keywords included *meaningful work*, *employee engagement*, *innovation*, *job satisfaction*, *job complexity*, *IWB*, *Maslow's hierarchy*, *motivation*, and *expectancy theory*. These keywords were either used separately or in combination.

The search mainly concentrated on peer-reviewed articles written in the past seven years. The search had full-text filters. However, seminal articles and some articles that presented a

historical perspective were more than seven years old. The literature articles provided the relationship between meaningful work and IWB, meaningful work and employee engagement, and employee engagement and IWB. Previous research explored the relationship between meaningful work, IWB, and employee engagement with other constructs. The quantitative design correlational research will examine the impact of meaningful work on employee engagement, which impacts IWB.

In some instances, the search criteria returned relevant literature, but the literature had blocked access. The cases when search results consisted of articles with blocked access were common when searching for seminal literature to provide historical background.

Theoretical Orientation for the Study

The theoretical orientation of the study was based on the expectancy theory. Vroom (as cited by Lloyd & Mertens, 2018) defined expectancy as the individualized likelihood of action or effort, leading to a consequence or performance. In this context, the study's theoretical orientation relies on the fact that people have choices, and they make selections based totally on which desire they believe will lead to the best personal outcome. Expectancy is the employees' awareness that accomplishing specific job-related tasks will lead to exceptional performance. Expectancy is the degree to which employees trust that their abilities will lead them to achieve work-related objectives (Lloyd & Mertens, 2018).

This study's theoretical orientation was based on the premise that employees have varied options while executing work-related tasks. They make decisions based on the choice they believe will lead to the best personal outcome. The effort-reward connection or motivation plays a vital role in the decision-making process. Edmonds et al. (2018) suggested that employee

motivation refers to the energy an individual employee brings to their job. Therefore, any intrinsic and extrinsic rewards help motivate, encourage, and boost employee productivity.

The expectancy theory of motivation explains the employees' decisions on various behavioral alternatives, sometimes called the *Expectancy-instrumentality-valence model*. As stated in Yeheyis et al. (2016), Vroom defined employee performance as a function of the product of motivational force and workers' ability. Expectancy theory proposes that motivation is dependent on the employees' expectations on their ability to perform job-related tasks and obtain required compensation (Yeheyis et al., 2016). The effort to performance expectancy refers to the employees' belief that exerting effort leads to a required performance level. For example, engineers working in corporations throughout the United States tend to perform more if they believe in and feel confident about their efforts. According to Yeheyis et al. (2016), the performance of outcome expectancy is the conviction that the desired outcome will follow employees' performance. Valence is the appreciation of the outcomes or compensation.

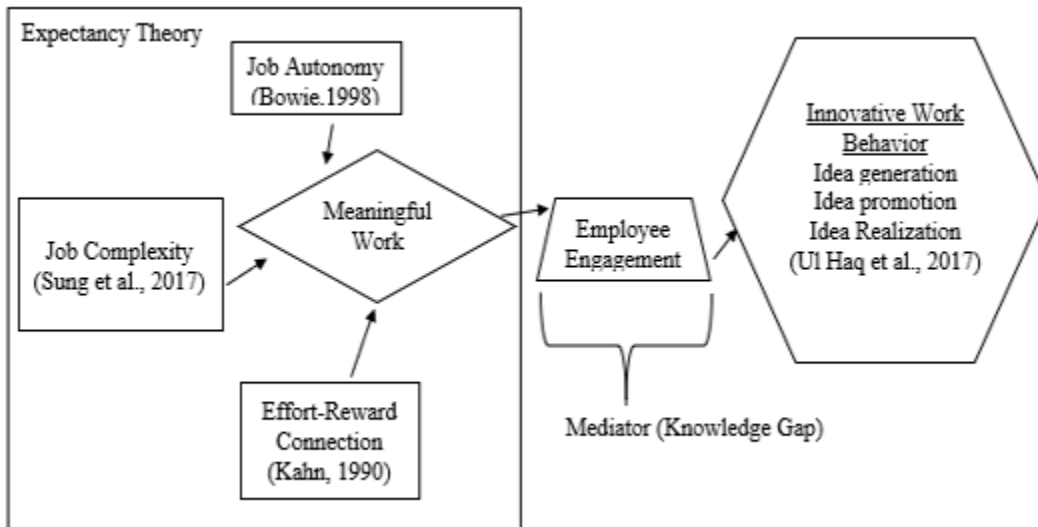
Vroom's expectancy theory was suitable for this research because (a) this theory is founded on the correlation between the employee's effort, employee's performance, and the attractiveness of the outcomes connected to the employee's performance, (b) this theory presents a general framework for evaluating and interpreting employee behavior in decision-making and motivation, (c) this theory has been meticulously tested and has received strong support (Fudge & Schlacter, 1999), and (d) this theory would seem most appropriate for the study to examine the correlation between meaningful work, IWB and employee engagement.

The conceptual framework in Figure 2 illustrates that the expectancy theory provides the foundation for achieving meaningful work through job autonomy, job complexity, and the effort-

reward connection. The attainment of meaningful work impacts employee engagement (mediator), which in turn, impacts IWB.

Figure 2

Conceptual Framework



Prior studies established that meaningful work is positively impacted by the effort-reward connection (Kahn, 1990), job complexity (Sung et al., 2017), and job autonomy (Bowie, 1998). Also, as previously illustrated in Figure 1, studies established that meaningful work positively correlates with employee engagement (Hoole & Bonnema, 2015), meaningful work positively impacts IWB (Cai et al., 2018), and employee engagement had a positive correlation with IWB (Orth & Volmer, 2017). This study examined the impact of meaningful work on IWB mediated through employee engagement.

The job autonomy shown in Figure 2 refers to how employees perceive discretion, freedom, and independence in scheduling job-related activities and describing work procedures (Galletta et al., 2016). In a highly autonomous job, employees perceive that their work efforts directly influence the work outcomes and therefore feel responsible for the outcome (Galletta et

al., 2016). Also, job autonomy can enhance learning and growth, which has a positive impact on work performance. Job autonomy facilitates employee motivation (Galletta et al., 2016) and stimulates employees' sense of responsibility for accomplishing work outcomes (Hackman & Oldham, 1975).

Also, the job complexity shown in Figure 2 refers to the intrinsically motivating and challenging properties of a job (Chae & Choi, 2018), capable of capturing employees' attention for the successful execution of job-related tasks. As reported by Amabile and Conti (1999), complex jobs present significant decision-making latitude and opportunities to utilize advanced skills, thereby appealing to employees to proactively identify the challenges associated with the task and search for new possibilities and alternative courses of action. As stated in Sung et al. (2017), these intrinsically motivating tasks' performance enhances risk-taking characteristics and experimental behaviors among employees since such tasks create adequate attention and motivation to experiment with unconventional methods when resolving given challenges.

Review of the Literature

This study examined the impact of meaningful work on IWB mediated through employee engagement as viewed through the lens of expectancy theory. Previous research examined the factors that impact meaningful work or IWB, or employee engagement, but no study has examined the relationship between meaningful work and IWB mediated through employee engagement. The intent of this review was to furnish an evaluation of research articles that establish the significance of research to the current body of knowledge and theoretical framework as it relates the impact of meaningful work on IWB mediated through employee engagement. It discusses previous scholarly works in the context of their contributions to understanding the relationship between meaningful work and IWB mediated through employee

engagement as viewed through the lens of expectancy theory. This literature review is divided into sections that include discussion on the evolution of innovation, expectancy theory, meaningful work, and employee engagement.

Evolution of Innovation

The research literature on the topical innovation area indicates Schumpeter (as cited in Crossan & Apaydin, 2009) created the initial definition of innovation emphasizing the aspect of novelty. Schumpeter (as cited by Crossan & Apaydin, 2009) suggested that innovation reflects new or novel outputs that include new quality of goods or new goods or new methods of production or new markets (Crossan & Apaydin, 2009). Schumpeter (as cited by Crossan & Apaydin, 2009) suggested the definition of innovation as a new organizational structure, which refers to executing organizational tasks differently. However, this definition was challenged by Hansen and Wakonen (1997) by stating that it was impractical to perform tasks or produce goods or services identically, which made any change an innovation as per Schumpeter's definition.

As stated in Utterback and Abernathy (1975), the characteristics of the innovative process and the characteristics of the organization's innovation attempts will differ systematically with variations in the organization's environment and its strategy for competition. Utterback and Abernathy (1975) described product innovation as applying new technology in the development of novel products or services to satisfy market needs and improve the organization's competitive advantage. The unit used by Utterback and Abernathy (1975) to analyze innovation was the overall production process to create products or services (and not necessarily the firm as per Schumpeter's definition).

Damanpour (1987) contemplated a new idea as an innovation after its implementation and suggested the definition of innovation as the implementation of concepts related to

processes, services, devices, systems, policies, or programs that are novel to the firm at the time of adoption. As reported by Damanpour (1987), generating a new idea does not signify innovation, but innovation occurs after the implementation of the novel concept. The decision to adopt an innovative concept does not constitute innovation, but innovation happens when organizational members start utilizing the creative idea to improve performance (Damanpour, 1987). In this relatively new perspective of innovation (compared to Schumpeter's initial definition of innovation), the implementation of concepts is the basis for innovation. In this view, the organization is viewed as an adopter of innovation and carries out actions to foster the utilization of innovations. Damanpour (1987) suggested that innovation has two phases, which include idea initiation (problem identification, gathering information, and evaluation) and idea implementation, which refers to the initial utilization of the innovation (until it becomes a routine). As reported by Zaidi et al. (2017), innovation is dependent on IWB. Khar Kheng et al. (2013), describe innovation as the employees' actions in creating, applying, and executing original ideas, processes, procedures, and products. As stated in Buta (2019), innovation involves integrating both dimensions of the creative process to transform known or new ideas into viable products required by individuals to ensure sustainable growth. The next section of this literature review will discuss the expectancy theory that will form the foundation of this study.

The Expectancy Theory

The principle of the expectancy theory formed the basis of the quantitative correlational study. The expectancy theory principle relies on the fact that employees have several options and make choices primarily based on the choice they believe will lead to a quality private outcome (Lloyd & Mertens, 2018). According to Ramlall (2004), expectancy theory asserts that

motivation is a blended function of the employee's perception that effort will lead to performance and of the perceived desirability of outcomes that may result from the performance.

Ramlall (2004) discusses Vroom's expectancy theory, indicating that the selections made by an employee among alternative courses of action are related to psychological events occurring at the same time with the behavior. In other words, employees' behavior is a result of conscious preferences among alternatives, and these preferences are systematically related to psychological processes, particularly perception and the formation of beliefs and attitudes (Ramlall, 2004). The three mental constituents that instigate and direct behavior are valence, instrumentality, and expectancy. As stated in Lloyd and Mertens (2018), expectancy theory derives from individuals' belief that effort will lead to a given performance (expectancy) that is likely to lead to the attainment (instrumentality) of a desirable or undesirable (valence) reward.

Valence

Ramlall (2004) discusses Vroom's expectancy theory which provides the definition of valence as the affective or emotional orientations employees hold regarding job-related outcomes. In this case, an outcome is said to be positively valent if the employee would prefer having it. The most vital characteristic of employees' valences regarding work-related outcomes is that they refer to the level of satisfaction the employee expects to receive from them, not from the real value the employee derives from them.

As reported by Lloyd and Mertens (2018), valence is the degree to which employees prefer a given outcome. It is the worth of the reward from employees' perspective as determined by their wants, aspirations, and preferences (Nimri et al., 2015). Through intrinsic motivation, valence plays a crucial role in the decision-making process by conceptualizing and assessing the value of available alternatives (Carruthers, 2017). Employees evaluate the benefits attached to

options in each situation, and the essential choice is selected (Carruthers, 2017). In this context, valence provides the motivational component as the basis for deliberate actions. For instance, in the employee/employer relationship, valence may involve the employee assessing the anticipated pay-package from several employers and make the decision to accept employment by the employer with the best pay-package. This construct (valence) will provide the framework for the proposed dissertation research since, as stated in Weeks and Schaffert (2017), rewards are essential determinants of meaningful work.

Instrumentality

Ramlall (2004) discusses Vroom's expectancy theory signaling that performance as an outcome refers to the degree to which employees believe that performing at a particular level will lead to the achievement of a desired outcome. Job-related effort can result in various outcomes that may include pay, promotion, and other related factors. In this context, an outcome is said to be positively valent if the employee perceives that it holds high instrumentality for the avoidance of negatively valent outcomes and the acquisition of positively valent consequences.

Lloyd and Mertens (2018) asserted that instrumentality is the perception that an outcome of performance by employees will be followed by anticipated rewards. Barba-Sánchez and Atienza-Sahuquillo (2017), suggested that instrumentality is the individual's perception that meeting performance expectations will result in compensation. For instance, the perception of employees at engineering firms is that they will get paid for their performance. This perception then forms the foundation for the employee to be motivated and engaged while performing job-related tasks at the firm. This construct (instrumentality) will provide a framework for the dissertation research since engaged employees find their work meaningful (Hoole & Bonnema, 2015).

Expectancy

Ramlall (2004) discusses Vroom's expectancy theory which described expectancy beliefs as action-outcome associations held in the minds of employees. It is the power of employee's belief regarding whether a particular outcome is possible. There are various factors that contribute to an employee's expectancy perceptions about various levels of job performance. These factors include employees' self-efficacy, job complexity, and job autonomy (Nimri et al., 2015).

Expectancy refers to the perception of the role of employees' effort in improving performance (Nimri et al., 2015). The factors that determine expectancy include employees' self-efficacy, the level of difficulty in attaining the goal(s), and the perceived employee control in selecting the method(s) to achieve the purpose (Nimri et al., 2015). Lloyd and Mertens (2018) discusses Vroom's expectancy theory which provides the definition of expectancy as a subjective probability of action or effort, leading to an outcome or performance. The level of difficulty in executing job-related tasks (job complexity) and the employees' perception of the level of freedom in selecting or designing methods to achieve desired objectives (job autonomy) determines employee expectancy. This construct (expectancy) will provide the framework in the research to examine the impacts of meaningful work on innovative work behavior mediated through employee engagement. Ramlall (2004) asserted that the tendency to act depends (a) on the expectation that an outcome will follow the action and (b) on the attractiveness of the outcome.

Meaningful Work

The literature on meaningful work assumes unitary employee perception of meaningful work. It allocates little or no effort to finding why the employee perception of meaningful work

may differ (Weeks & Schaffert, 2017). Weeks and Schaffert (2017) asserted that meaningful work is regarded as that which is purposeful and significant. However, plenty of research done on this topic assumes that employees share a sense of meaningful work. The definitions provide little or no emphasis on how and why the meaning may differ from one employee to the other (Rosso et al., 2010). According to Rosso et al. (2010), there is little, or no emphasis given to how and why the description of meaningful work may differ from one employee to the other. Michaelson et al. (2013) suggested that factors such as gender, age, family, and life experiences can profoundly impact work's meaningfulness.

Kahn (1990) defined work meaningfulness as the knowledge that effort is legitimate and compensated appropriately. In this context, meaningful work is the employee perception that one is receiving a return on investments. Employees are likely to display more effort when they have faith that they will obtain valued compensation for the successful execution of their duties. Therefore, employees experience such meaningfulness in their work when they felt as being useful, worthwhile, and valuable. Meaningful work is the employee perception that they make a difference as they execute their work-related duties, and their effort is not undervalued (Kahn, 1990).

The literature reviewed indicated that several factors make work meaningful or purposeful and significant. As reported by Rosso et al. (2010), the fact that work has a meaning does not necessarily determine that it is meaningful. Meaningfulness refers to the amount of significance something holds for an individual. Meaningful work consists of alignment between the employee and the work-related tasks. The extent to which work-related tasks match the employees' values and beliefs often determine the degree of meaningful work (Rosso et al., 2010). The individual employee and what they bring to the worksite (for example, work

orientations, work beliefs, values, or attributes of the work itself) determine meaningful work. Also, work autonomy and independence directly influence meaningful work because employees feel empowered and responsible (Bowie, 1998).

The Relationship Between Meaningful Work and Expectancy Theory

According to Morrison et al. (2007), expectancy theory developed by Vroom suggested that individuals feel more motivated to perform job-related tasks when they perceive that they are knowledgeable and confident to execute these tasks successfully. These individuals who perceive that they are knowledgeable in executing their tasks are likely to find their work meaningful. Verharen et al. (2019) described meaningful work as a job-related task that is perceived as being particularly significant and aligns with personal beliefs, values, and individual's behavior. Morrison et al. (2007), suggested that individuals in organizations who experience effort-performance-expectancy have high self-efficacy and believe that they will likely be successful if they attempted a given job-related task. Conversely, individuals who perceive that they cannot execute their job-related tasks (either for lack of knowledge or any other reason) are likely to find their work unmeaningful. Shin et al. (2016) suggested that individuals interpreted the job requirement as important either because the performance-reward expectancy was high or because the perceived value for the organization was high. On the other hand, the belief that a job-related task is too challenging, or employees are operating from outside the limits of their skills and abilities will, according to expectancy theory, result in lower worker motivation and increased employee dissatisfaction (Morrison et al., 2007).

The Ethical Dimensions of Meaningful Work

The ethical debate on what constitutes meaningful work is ongoing (Michaelson et al., 2013). Researchers have yet to assign how much of the meaning construed about an employee's

life originates from the meaning the employee finds at work. Chalofsky and Cavallaro (2013) contended that since employees spent much of their life working, the employees who believe in moral values would argue that meaningful work is an essential human need (Yeoman, 2014). Therefore, providing meaningful work to all employees is a moral obligation of all organizations (Bowie, 1998; Yeoman, 2014). Michaelson et al. (2013) asserted that since employees choose their work, they equally have an ethical obligation to engage in meaningful work.

Although researchers are investigating the attributes of meaningful work shared by most employees, organizational studies acknowledge the necessity to consider personal perceptions and experiences of meaningful work (Michaelson et al., 2013). The ethical obligation of organizations to provide meaning, together with the emphasis on employees to initiate meaning altogether, necessitate the need to comprehend what constitutes meaningful work and how the description of meaningful work might vary between employees (Weeks & Schaffert, 2017).

The employees' beliefs, values, strengths, and preferences influence feelings about self, which interacts with the work they perform. Chalofsky and Cavallaro (2013) suggested a model detailing how the sense of self and their employment interacts with the balance employees experience to ascertain their meaningful life. Lips-Wiersma and Wright (2012), asserted that the need for a moral, authentic, and dignified living was obvious. Since organizations dominate employees' time, there is a Kantian argument that states that organizations have an ethical responsibility to provide work that gives them (employees) autonomy, pays fairly, provides chances for moral development, and is freely chosen (Bowie, 1998). Further, organizations ought to respect the employees' ability for rational thinking. The match between the employees' concept of self and the work that they (employees) perform can predict meaningful work (Weeks & Schaffert, 2017).

Weeks and Schaffert (2017) observe that employees spend most of their life at work, and therefore work frequently defines a component of the employees' perception of self.

Subsequently, perceiving one's job as meaningful can improve employees' well-being and provide significance to life. As reported by Chalofsky and Cavallaro (2013), meaningful work is more than simple job satisfaction, work engagement, or organizational commitment. A person's self-experience includes reflection on their values, beliefs, strengths, and preferences, which interacts with the employee's work (Weeks & Schaffert, 2017).

The study by Chalofsky and Cavallaro (2013) posits a model of how the sense of self and the work overlaps with the stability people experience to determine their appreciation of meaning in life. There exists an apparent want for an authentic, moral, and dignified living (Weeks & Schaffert, 2017), and corporations that dominate employees' time have an ethical responsibility to provide meaningful work (Bowie, 1998). Practically, managers can create a meaningful workplace by providing adequate wage, employee empowerment and participation, cross-training, and possibilities for development (Weeks & Schaffert, 2017).

Meaningful work and Maslow's Hierarchy of Needs

Meaningful work is closely related to Maslow's needs hierarchy. According to Maslow (1943), there are at least five sets of goals which can be referred to as basic needs and are physiological, safety, love, esteem, and self-actualization. Maslow (1943) suggested that employees at organizations are motivated by the desire to achieve or maintain the various conditions upon which these basic satisfactions rest. Employees are motivated by the desire to achieve lower needs and higher needs in the hierarchy start to appear as the lower needs are satisfied. The underlying principle in Maslow's hierarchy is that when a specific want is satisfied, another takes its place. A person, therefore, strives to become fully realized (Hoole & Bonnema,

2015). The self-actualization translates into work when employees entirely integrate work into their identity (Hoole & Bonnema, 2015). Subsequently, the achievement of work-related objectives becomes equivalent to employees' self-actualization.

The implications of the Maslow's hierarchy provide valuable insights for leaders in corporations. One of the implications was that organizational leaders should find methods of motivating employees by developing programs and practices that are aimed at satisfying emerging or unmet needs (Maslow, 1943). Also, organizational leaders should put into practice support programs and focus groups aimed at supporting employees to deal with stress, especially during more challenging times and taking the time to understand the needs of the respective employees. Organizational leaders are obligated to create a conducive climate where employees can develop to their fullest potential. Conversely, the failure to offer a favorable climate would increase employee frustration and could result in lower job satisfaction, poorer performance, and increased employee turnover.

The research into meaningful work was vital because it is associated with desirable and essential work outcomes, such as job satisfaction and performance. Organizational leaders can nurture meaningful work by appealing to employees' identity (Rosso et al., 2010) since it is through this identity, practices ultimately influence experienced meaningfulness. Rosso et al. (2010) asserted that identity is one lens through which employees understand their work. Therefore, nurturing meaningful work originates with appealing to elements of an employees' identity.

Employee Engagement

Employee engagement has received substantial importance in the research literature and amongst organizational leaders who want to retain employees and attract high-performing new employees. Kahn (1990) described engaged individuals as those who employ and express themselves physically, cognitively, and emotionally at job-related task performances. On the other hand, disengaged employees withdraw and defend themselves physically, cognitively, and emotionally while performing work-related tasks. Kahn (1990) recognized three psychological conditions that impact worker engagement as psychological meaningfulness, psychological safety, and psychological availability. The sensible implications of this conceptualization are that managers ought to promote a feeling of meaning and reason for performing work itself to enhance employee engagement and create an impetus for continued productivity and high morale (Morrison et al., 2007). As stated in Kordbacheh et al. (2014), employees who determine their jobs to be challenging and perceive a match between their values and that of the organization are more likely to find their jobs meaningful. Subsequently, those employees who perceive their jobs to be meaningful are likely to be more engaged. Kordbacheh et al. (2014) asserted that employers should place less emphasis on extrinsic factors of the job, such as pay and benefits, and pay more attention to building an environment of improvement and growth.

Enhancing Employee Engagement.

Morrison et al. (2007) argued that to enhance personnel engagement, managers should promote a sense of meaning and purpose in work itself because they are the impetus for continued productivity and high morale. In their study, Schaufeli et al. (2002) define employee engagement as a worthwhile and satisfying state of mind related to work activities symbolized by absorption, vigor, and dedication.

In this description of employee engagement, vigor denotes employees' persistence, mental resilience, and energy feelings. Employees with high vigor are eager to work hard, unrelenting, and preserving to prevail over difficulty at work. Dedication manifests in experiencing a sense of significance, challenge, pride, and high involvement in one's work. The perception of highly dedicated employees is that work is meaningful, challenging, and inspiring. Absorption refers to an employee who is thoroughly captivated at work and characterized by an unimpaired sense of time. Employees with high absorption completely concentrate while executing work-related tasks and detach themselves from their surroundings and time (Schaufeli et al., 2002). In keeping with Pech and Slade (2006), employee engagement refers to the underlying strength organizations can utilize to bolster their success and personalized advantages.

As stated in Schaufeli et al. (2002), employee engagement refers to a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption. In this description of employee engagement, (a) vigor denotes employees' persistence, mental resilience, and feelings of energy, (b) dedication manifests in experiencing a sense of significance, challenge, and pride as well as high levels of involvement in one's work, and (c) absorption can be conceived of as being fully captivated at work and is characterized by an impaired sense of time (Orth & Volmer, 2017). In keeping with Pech and Slade (2006), worker engagement refers to the corporation's underlying strength, which would be utilized for organizational success and personalized advantages.

The engagement aspect is aligned with the characteristics of vigor, dedication, and absorption (Schaufeli et al., 2002). The ideas of intrinsic and extrinsic job resources are frequently studied as antecedents of employee engagement. Several studies demonstrated

connections between intrinsic job resources with employee engagement. According to Na Ayutthaya et al. (2016), innovativeness, appreciation, and supervisor support positively impacted employee engagement. Social support, learning opportunities, and autonomy had a positive relationship with employee engagement (Bakker & Bal, 2010).

The study by Pukkeeree et al. (2020) assessed the influences of attainment value and positive thinking as moderators of employee engagement and IWB. The research utilized a cross-sectional design with 348 questionnaires submitted to human resource officers to test the proposed relationships. The results of the study revealed that positive thinking effectively moderated attainment value and employee engagement regarding IWB. Christian et al. (2011) observed that employee engagement can maximize the staff's abilities to perform proactive tasks as IWB. Pukkeeree et al. (2020) asserted that high employee engagement levels could increase employees' innovative performance levels, leading to company growth.

Hough et al. (2015) investigated the antecedents to engagement, including ethical environment and organizational trust. The research investigated the impact of trust as a mediator of an ethical environment and employee engagement. The study results established that organizational trust mediates the relationship between an ethical environment and employee engagement. Several factors contribute to employee engagement, but the employee's environment is the most important. The environment is the social system in which organizations operate. Therefore, to understand the effects of the environment on employees' engagement, it is crucial to get an opinion about the organization's constituent features that structure ethical practice as well as the process contributing to the practice. For example, organizational ethical issues (like zero tolerance on corruption or sexual harassment) can positively impact employees, thereby creating an engaged workforce.

The Ethical Dimension of Employee Engagement

Vitell and Singhapakdi (2007) suggested that the act of establishing ethics as a convention in organizations has positive effects on employees in terms of increased morale, higher job satisfaction, and a high level of organizational commitment. A culture of high ethical values promotes an environment of shared values, and employees are motivated to go beyond their expected job requirements to implement ethical decisions (Hough et al., 2015). Also, organizational trust can have a direct impact on employee engagement. Organizational trust mirrors the extent to which employees trust in their organization and its leadership (Cohen & Dienhart, 2012), and can result in enhanced production through employee engagement. Employees who determine their jobs to be challenging with a perceived match between the employees' values and those of the organization were more likely to find their jobs meaningful (Kordbacheh et al., 2014). Consequently, employees who found their jobs meaningful were more likely to be engaged (Hoole & Bonnema, 2015).

It was essential to study employee engagement because it contributes towards the overall organizational success. Engaged employees exhibit a high degree of commitment to their work, they are passionate, and they are in synchrony with their organization's overall objectives. Also, engaged employees make a distinct effort to contribute to the overall performance of the organization. According to Schaufeli et al. (2002), although the principles of engagement, commitment, satisfaction, and involvement are intently related, the notion of engagement includes a high level of expressive, behavioral and well-being responses like feeling happy and accomplishment at work.

Innovative work behavior

The study by Ul Haq et al. (2017) describes IWB as receiving, producing, and enforcing new ideas, processes, products, or services. The study aimed to investigate the factors that enhance employees' innovative behavior and whether it remains the same when employees' organizational tenure increases. The study proposed that innovativeness among employees may enhance innovative behavior through four factors, which include (a) perceived failure tolerance, (b) communication openness, (c) work discretion, and (d) reward fairness. The results from a sample of 381 employees from the telecommunication sector showed that all the antecedents had a positive effect on employee innovativeness.

IWB is described as the individual's behavior to initiate and intentionally introduce new and beneficial ideas, processes, merchandise, or procedures within a work role or organization (Hsiao et al., 2011). In their study, Hsiao et al. (2011) aimed to examine the influence of teacher self-efficacy on IWB. The study applied randomly stratified sampling to select 546 secondary school teachers from 20 public/private schools in Taiwan's northern region. The data were analyzed using descriptive statistics, Pearson's correlation coefficients, and regression analysis. The results indicated that there was a strong positive relationship between teachers' self-efficacy and IWB.

Innovative work behavior and Job autonomy

In their study, Ramamoorthy et al. (2005) integrated ideas on psychological contract, job design, and organizational justice to develop and test a model that could predict IWB. The psychological contract is an individual's beliefs regarding reciprocal obligations (Rousseau, 1990), and such perceptions of mutual obligations are formed either through implicit or explicit contractual obligations. As stated in Flood et al. (2001), perceptions of contract fulfillment on the

part of the employees may result in loyalty, performance, organizational commitment, and intention to stay with the employer. Such contract fulfillment may result in employees feeling the realization of their expectations regarding contractual obligations. The findings from the study by Ramamoorthy et al. (2005) established that the psychological contract variable of job autonomy, perceived responsibility to innovate, and pay directly impacted IWB. Similarly, job autonomy and pay circuitously impacted IWB through the mediating variable of perceived responsibility to innovate. The findings also established that IWB was affected by the organizational processes of equity perceptions and procedural justice perceptions (Ramamoorthy et al., 2005).

Ortega-Egea et al. (2014) conducted an empirical study that attempted to determine the relationship between pro-innovation climate, leader-member exchange (LMX), and social capital with the IWB. The results suggested a significant relationship between the pro-innovation climate, social capital, and LMX with the IWB. The study's findings established that workers who were in regular contact with external entities tended to engage in IWB. Brentani (2001) suggested that when workers had the opportunity to contact external entities such as customers, they could discover and obtain new ideas that are important for the organization.

The ethical dimension of innovative work behavior

Ethical leadership provides another dimension in which ethics impacts the IWB construct. Peoples' lives and behaviors directly respond to the ethics phenomena in organizations (Turgut & Sökmen, 2018). The perceived ethics phenomenon is the employees' opinions on authorized and unauthorized practices (formal or informal) within the organization (Turgut & Sökmen, 2018), which are likely to impact IWB. IWB comprises three activities: (a) recognizing the existing problem, generating ideas, (b) promoting activities related to the idea, and (c) idea

implementation (Scott & Bruce, 1994). In the execution of these activities, ethical approaches within an organization, according to Turgut and Sökmen (2018), provides the necessary confidence for employees to talk about their ideas openly. In this context, organizations with ethical leadership create a conducive ethical environment in the organization, increasing the likelihood of employees feeling confident to talk about novel ideas that may challenge the status quo (Turgut & Sökmen, 2018).

As stated in Zahra and Waheed (2017), ethical leaders have followers who perceive high-quality relationship with their leader. The employees reciprocate this relationship by expending more efforts in their work-related activities. In this regard, ethical leaders support employees at all the phases of the IWB through exhibiting qualities of collective motivation, altruism, justice, honesty, trustworthiness, openness, and fair treatment (Zahra & Waheed, 2017). In the initial stage where employees are involved in generating ideas, ethical leaders offer support in enabling a two-way communication that inspires employees to create and express novel ideas that can improve work processes and procedures (Zahra & Waheed, 2017).

Zhu et al. (2004) asserted that ethical leaders have high respect for employees' dignity and talent. They are likely to provide employees with a chance to gain work-related skills by allocating their tasks depending on their capabilities. This action is likely to contribute to the employees' capacity to introduce new enhancements. Ethical leaders support the second phase, which involves idea promotion through exhibiting honesty and altruism characteristics, thereby enabling employees to be confident in sharing and promoting the new ideas (Zahra & Waheed, 2017). In the third stage of the innovation process, ethical leaders support employees by providing an environment that facilitates independence, freedom, and autonomy, which facilitate employees to implement new ideas (Zahra & Waheed, 2017).

IWB is the action exhibited in employees' performance directed at creating new ideas, promoting, and applying new ideas that are beneficial for the employee, the team, and the corporation (Janssen, 2000; Shih, & Susanto, 2017). Therefore, it is important to examine the factors that impact IWB because, As reported by De Jong and Den Hartog (2007), IWB produces new ideas and makes such novel ideas a reality that creates welfares corporation. The studies on innovation deal with managing innovation at the levels of the corporation, networks, individual employees, and workgroups (De Jong & Den Hartog, 2007; Shih & Susanto, 2017) but studies on IWB focuses on innovation at the employee level (De Jong & Den Hartog, 2007). Therefore, the execution of IWB is vital if the benefits of innovation are to be realized (Scott & Bruce, 1994; Shih & Susanto, 2017)). Scholars contend that innovation diverges from ideas (Scott & Bruce, 1994), and the superiority of ideas depends on how employees create, conduct, respond to, and alter these ideas (Shih & Susanto, 2017).

Although previous research examined the factors that impact meaningful work or IWB, or employee engagement, no study has examined the relationship between meaningful work and IWB mediated through employee engagement. The mediating role of employee engagement in the relationship between meaningful work and IWB can help researchers understand how organizational leaders can encourage IWB. The study is advantageous to corporate leaders because it provides new insights that can sustain or boost competition by attaining a point of difference within their chosen market (Mazzarol et al., 2014). Also, by identifying what meaningful work represents, this research proposed that organizational leaders ought to be involved in influencing employees' perceptions of meaningful work to expedite IWB.

Findings

IWB refers to the employees' actions to generate, introduce, and apply beneficial novelty at all levels of the organization (Sameer, 2018). It comprises several practices and behaviors that included idea generation, opportunity discovery, investigation, championing, and application (Kleysen & Street, 2001; West & Farr, 1989). The scope of IWB includes developing new product ideas and new technologies. It also spans wide to include changes in administrative procedures that aim to improve work relations, initiate new ideas, and apply new ideas or technologies to work processes aimed at improving the effectiveness of work (Kleysen & Street).

In this study, Sameer (2018) examined the relationship between positive psychological capital and innovative behavior, job satisfaction, and innovative behavior and engagement and innovative behavior. As stated in Luthans and Youssef-Morgan (2017), positive psychological capital refers to studying positive emotions, positive traits, and positive institutions. The findings showed that psychological capital, with its four components of optimism, hope, efficiency, and resilience, predicts innovative behavior, affecting satisfaction and engagement (Sameer, 2018).

IWB is a deliberate behavior of an employee in the workplace to offer new ideas, develop new services/products, and establish new processes and procedure in his/her own unit, or in the whole organization (Ul Haq et al., 2017). Innovativeness is the exploration of opportunities, generation, promotion, and implementation of ideas in the workplace (Scott & Bruce, 1994). Innovators are onlookers of opportunities to crave for their creative appetite. They come up with new solution. They promote their ideas and try to gain the support and develop teams. The process completes with the implementation of ideas after testing, modification, and commercialization (Dörner, 2012). As reported by Amo (2006), innovativeness is everything from the modification of routines or using fresh remedies, to the simplification of work, and to

the service improvement to end user. Scott and Bruce (1994) observe that innovative employees engage in any or a combination of these activities at any given time. All the definitions of innovativeness include the element of “newness.” Shin et al. (2016) describes that newness does not necessarily mean that the idea should be new to the world. In terms of employee innovativeness, it refers to anything that is new in the context of the organization. Conversely, Axtell et al. (2000) believes that employee innovativeness may range from incremental to radical innovations, and from administrative to technical innovations, and from soft innovations to hard innovations. Whichever the aspect of innovativeness employees engages in, the problem arises that how the innovativeness among employees may be enhanced.

In keeping with Anderson et al. (2014), IWB refers to the intentional implementation of novel and useful ideas (Anderson et al., 2014). It consists of both economic and psychological gains through beneficial administrative, technological, or social changes to the organizational status quo (Orth & Volmer, 2017; West et al., 2004). Therefore, researchers are keenly interested in identifying personal and contextual determinants of innovative behavior (Orth & Volmer, 2017). In this study, Orth and Volmer (2017) investigated the relationship between situational job autonomy and work engagement with innovative behavior. The findings established that job autonomy, and work engagement positively predicted innovative behavior (Orth & Volmer, 2017).

Cai et al., (2018) proposed and tested a moderated mediation model that examined the influence of servant leadership on employee IWB mediated through meaningful work and the moderating role of job autonomy in this process. The findings suggested that employees' perceptions of meaningful work mediated the relationship between servant leaders and IWB (Cai et al., 2018). The results also showed that this mediating relationship was conditional on the

moderating role of job autonomy in the path from servant leadership to meaningful work (Cai et al., 2018).

Also, Jaaffar et al., (2018) examined the relationship between the employees' motivation to undertake entrepreneurship and innovative behavior. The findings of this study established that there was a significant relationship between employees' motivation to undertake entrepreneurship and innovative behavior (Jaaffar et al., 2018). Therefore, corporations must validate their innovation process by fostering and generating a pleasant environment in which the workers' creativity results in innovative behavior (Jaaffar et al., 2018). Also, innovative behavior's main attributes direct toward employees' decision-making, flexibility of actions, attitude to risk, motivation for achievement, and a motivational attitude (Jaaffar et al., 2018).

The purpose of the study by Hoole and Bonnema (2015) was to determine whether a relationship exists between work engagement and meaningful work. Work engagement refers to the energetic link between employees and their jobs (Schaufeli et al., 2002), and meaningful work refers to purposeful and significant (Weeks & Schaffert, 2017). The study applied Pearson's correlation coefficient to examine the relationship between work engagement and meaningful work. The results established a positive correlation between work engagement and meaningful work (Hoole & Bonnema, 2015).

Previous literature showed that psychological capital, with its four components of optimism, hope, efficiency, and resilience, predicts IWB (Sameer, 2018), Also, employees' perceptions of meaningful work mediated the relationship between servant leaders and IWB (Cai et al., 2018). Further, results from literature established a positive correlation between work engagement and meaningful work (Hoole & Bonnema, 2015). The review of previous literature established that there was no study that simultaneously examined the relationship between

meaningful work, employee engagement and IWB. Therefore, this study examined the relationship between meaningful work and IWB mediated through employee engagement.

Synthesis of Research Findings

The employee innovative behavior is a deliberate behavior of an employee in the workplace to offer new ideas, develop new services/products, and establish new processes and procedures in his/her unit or the whole organization (Haq et al., 2017). As stated in Scott and Bruce (1994), innovativeness is exploring opportunities, generating, promoting, and implementing ideas in the workplace. Innovators are onlookers of opportunities to satisfy their creative appetite and they come up with new solutions. Innovators promote their ideas and try to gain stakeholder support. The process is complete with implementing the ideas after testing, modification, and commercialization (Dorner, 2012). According to Amo (2006), innovativeness is everything from modifying routines or using fresh remedies, simplifying work, and the service improvement to end-user. Scott and Bruce (1994) observe that innovative employees engage in any or a combination of these activities at any given time. All the definitions of innovativeness include the element of *newness*. Yuan (2012) stated that newness does not necessarily mean that the idea should be new to the world. In terms of employee innovativeness, it refers to anything new in the context of the organization. Conversely, Axtell et al. (2000) asserted that employee innovativeness might range from incremental to radical innovations, and from administrative to technical innovations, and from soft innovations to complex innovations.

Bammens (2016) investigated the complicated relationship between organizational care and employees' innovative behavior. The study results indicated that organizational care influenced the creative, complex, and mundane elements of employees' innovative behavior mediated through the motivational constructs of intrinsic motivation. Organizational care refers

to the behavioral manifestations of an organization's intention to protect and improve its employees' satisfaction and well-being (Miller & Lee, 2001). Such behavioral manifestations can assume many forms, including formal employee support programs (Grant et al., 2013), progressive human resource management practices in domains such as compensation and development (Miller & Lee, 2001), and various informal expressions of care (Lawrence & Maitlis, 2012). The shared underlying component of each of these behaviors is the firm's intent to go the extra mile in treating its employees well (Miller et al., 2009). According to the study by Kanter (1996), IWB can be encouraged by adopting a social work framework in which employees feel inspired to generate, promote, and realize inventive ideas and concepts. Consequently, this can significantly enhance job satisfaction expressed through compliance with challenging tasks, management practices, working conditions, corporate culture, compensation system, and professional competence (Hrnjic et al., 2018).

The correlation between employees' motivation to undertake entrepreneurship and innovative behavior was investigated by Jaaffar et al. (2018). The outcome showed a positive and substantial correlation between the employees' general incentive to pursue entrepreneurship and innovative behavior. Van de Ven (1986) illustrated that the innovative behavior directed at employees originates from the organizational culture. Van de Ven (1986) proposed that this could lead to innovative ideas depending on the employees that develop, carry, react, and modify them. Woodman et al. (1993) affirmed that innovative behavior concentrating on workers would generate new ideas, which are shared with peers or supervisors and then spread throughout the organization.

According to De Jong and Den Hartog (2007), IWB comprises all actions such as idea-generating and sharing with the management, spreading the innovation throughout the

organization, and the entire innovation implementation process. Hence, according to Jaaffar et al. (2018), corporations must validate their innovation process by fostering and generating a pleasant environment in which the workers' creativity results in innovative behavior. Kanter (1996) asserted that the innovative behavior amongst workers is associated with concepts that include corporate entrepreneurship, intrapreneurship, and the management of innovations because it explains the renewal process and the revitalization of the organization's initiatives. Jaaffar et al. (2018) suggested that the main attributes of innovative behavior are specifically directed on employees' decision making, the flexibility of actions, their attitude to risk, motivation for achievement, and valuing of a motivational attitude.

Cai et al. (2018) examined the effects of servant leadership on employee IWB as mediated through meaningful work. The results suggested that servant leadership positively impacted meaningful work, which positively impacted IWB. Similarly, Orth and Volmer (2017) established that daily work engagement had substantial positive within-person impacts on innovative behavior (Orth & Volmer, 2017). The mediating outcomes of meaningful work on the association between transformational leadership and IWB have been determined to be partial. Also, the study by Shin et al. (2016) suggested the existence of a positive correlation between perceived innovation job requirements and innovative behavior for employees with a low intrinsic interest in innovation.

Further, Sameer (2018) tested the correlation between psychological capital and employees' innovative behavior, positively impacting job satisfaction and engagement. Additionally, a review of the research articles confirmed a moderate positive relationship between work engagement and meaningful work (Hoole & Bonnema, 2015). Several studies suggest the relationship between meaningful work and IWB (Cai et al., 2018), meaningful work

and work engagement (Hoole & Bonnema, 2015), and IWB and work engagement (Orth & Volmer, 2017). However, we do not have a study that simultaneously investigated the relationship between meaningful work, employee engagement, and IWB. Therefore, this study investigated the impact of meaningful work on IWB mediated through employee engagement.

Critique of Previous Research Methods

The literature on meaningful work assumes unitary employee perception of meaningful work and allocates little or no effort to finding why the employee perception of meaningful work may differ (Weeks & Schaffert, 2017). The methodology and measurement instruments for meaningful work in previous studies examine the unitary employee perception of meaningful work. As reported by Michaelson et al. (2013), the ethical debate on what constitutes meaningful work is ongoing since researchers have yet to assign how much of the meaning construed about an employee's life originates from the meaning employees find at work.

The literature on previous research shows the surveys for measuring meaningful work, IWB, and employee engagement constructs were self-reported rather than supervisor rated. These employee-rated assessments can fail to assess the construct objectively (Cai et al., 2018). Most research methods also require participants to respond to more than one construct in the same survey simultaneously. As stated in Hoole and Bonnema (2015), the response to more than one construct can lead to method bias, potentially influencing the study results.

The research literature on the study's constructs indicates that most previous studies applied quantitative methods. Some of the previous research methods applied convenience sampling, a nonprobability sampling method where the target population participants meet specific practical criteria. The requirements to meet the criteria may include a member's willingness to participate, availability, or geographical proximity. The convenience sampling

method's main issue is that it is likely to be biased, and it does not represent the entire population (Field, 2013). The other issue of concern with convenience sampling is the problem of outliers. According to Field (2013), outliers reduce statistical analysis power by increasing the error variance and skewing the scores' distribution. Also, the sample population's estimates, or outcomes can differ from the general population with less generalizability. Furthermore, previous research investigated a small number of the population, which raises concerns over the generalizability of the research findings (Cai et al., 2018).

Summary

The previous literature on meaningful work provides little or no emphasis on how and why the meaning may differ from one employee to another (Rosso et al., 2010). Factors such as gender, age, family, and life experiences can profoundly impact the meaningfulness of work (Michaelson et al., 2013) with a subsequent impact on IWB and employee engagement. The importance of meaningful work stems from the fact that employees spend most of their life at work, and therefore work frequently defines a component of the employees' perception of self (Weeks & Schaffert, 2017). The study that will examine the impact of meaningful work on IWB is important because employees who perceive their job as meaningful are likely to show IWB, resulting in sustaining or improving corporate market position.

Also, research literature indicates that several factors impact IWB. The psychological contract variable of job autonomy, perceived responsibility to innovate, and pay directly affected IWB (Ramamoorthy et al., 2005). Also, job autonomy and pay circuitously impacted IWB through the mediating variable of perceived responsibility to innovate. Further, the organizational processes of equity perceptions and procedural justice perceptions via the mediating variables of psychological contract impacts IWB (Ramamoorthy et al., 2005).

Although previous research examined the factors that impact meaningful work or IWB, no study has examined the relationship between meaningful work, IWB, and employee engagement as the mediator. The mediating role of employee engagement in the relationship between meaningful work and IWB can help researchers understand how organizational leaders can encourage IWB. The study will be advantageous to corporate leaders because it will provide new insights that can sustain or boost competition by attaining a point of difference within their chosen market (Mazzarol et al., 2014). Also, by identifying what meaningful work represents, this research will be proposing that organizational leaders ought to be involved in influencing employees' perceptions of meaningful work to expedite IWB.

CHAPTER 3. METHODOLOGY

This chapter describes the quantitative correlational study to examine the relationship between meaningful work and IWB mediated through employee engagement. The chapter will also explain the study's purpose, research questions and hypotheses, and the research design. Further, this chapter will discuss the target population and sample population, procedures, measurement instruments, and ethical considerations related to the study.

Purpose of the Study

The purpose of this quantitative correlational study was to examine the relationship between meaningful work and IWB mediated through employee engagement. Prior studies investigated the relationship between meaningful work and IWB (Cai et al., 2018), meaningful work and employee engagement (Hoole & Bonnema, 2015), and employee engagement and IWB (Orth & Volmer, 2017). However, this study was the first to depict a mediated model where employee engagement might influence the relationship between meaningful work and innovative work behavior.

The quantitative correlational study measured the meaningful work variables that include positive meaning, meaning-making through work, and the greater-good motivation (Steger et al., 2012). The study also measured the employee engagement variables that include vigor, dedication, and absorption (Schaufeli et al., 2002). Further, the study measured IWB variables that include (a) searching out new processes, technologies, product ideas, and techniques, (b) promoting and championing ideas to others, (c) examining and obtaining capital required to execute new concepts, and (d) developing enough strategies and timeframe for the application of newly discovered ideas (Scott & Bruce, 1994). The population for this study consisted of engineers with at least three years' experience working in engineering firms in the United States.

The Pearson correlation coefficient was applied to determine the correlation between the variables in meaningful work and IWB mediated through employee engagement (Field, 2013).

Research Questions and Hypotheses

The quantitative design correlational research examined the relationship between the variables of meaningful work and IWB mediated through employee engagement. The researcher investigated the following research question and hypotheses:

- RQ1: What is the impact of meaningful work on IWB mediated through employee engagement of engineers with at least three years' experience working in engineering firms in the United States?
- H₀: There is no statistically significant correlation between meaningful work and IWB mediated through employee engagement.
- H_a: There is a statistically significant correlation between meaningful work and IWB mediated through employee engagement.

Research Design

The quantitative design correlational research examined the relationship between the variables of meaningful work, IWB, and employee engagement, as it best expresses the research's intent. This quantitative non-experimental design survey-based approach was appropriate because the constructs in this study are quantifiable (can be analyzed statistically). The population for this study were engineers with at least three years' experience working in firms in the United States.

As a third-party, SurveyMonkey screened, and recruited participants based on the researcher's inclusion criteria. Also, SurveyMonkey ensured participants signed the informed consent form, administered the surveys, and collected the data from a sample population

randomly selected from engineers with at least three years' experience working in engineering firms in the United States. SurveyMonkey administered a survey questionnaire consisting of three sections. The questionnaire sections included the six-item Utrecht Work Engagement Scale for measuring work engagement (Schaufeli et al., 2002), the six items as published in Scott and Bruce (1994) for measuring IWB, and the Work and Meaning Inventory (WAMI) instrument for measuring meaningful work (Steger et al., 2012). A 5-point Likert Scale was used to collect responses from the participants. The Pearson correlation coefficient was utilized to determine the correlation between the constructs (Field, 2013).

As discussed in Chapter 1, Figure 1 showed the conceptual representation of the study's constructs. Prior studies have established a positive correlation between meaningful work and employee engagement (Hoole & Bonnema, 2015). Previous studies have also shown a positive correlation between employee engagement and IWB (Orth & Volmer, 2017). Further, previous research suggested that servant leadership influenced meaningful work, positively impacting IWB (Cai et al., 2018). This study examined the impact of meaningful work on employee engagement and the subsequent effect on IWB.

In this correlational study, there were no independent and dependent variables. The study examined the correlation between meaningful work variables and IWB variables mediated through employee engagement variables. In finding the correlation between meaningful work variables and IWB variables, the study assumed that the researcher would have an objective stance in developing hypotheses, identifying measurement instruments, identifying sample populations, collecting, and analyzing data, and generalizing results. In this quantitative study, the assumption was that the subjects and objects exist separately from their perception of self, and it involves an objective measurement of facts or occurrences (Hathaway, 1995).

The study design assumed a positivist stance where deductive logic with precise empirical observations was applied to find the correlation between the meaningful work variables and IWB variables mediated through employee engagement variables. The positivist paradigm's basic assumption is that the researcher believes in an external reality comprising facts constructed to obey specific laws (Hathaway, 1995). In this positivist paradigm, the study's main objective was to develop the most objective methods possible to get the closest approximation of reality (Tuli, 2011). The research data analysis assumed that all observations are independent of each other, and the data collected are normally distributed. Also, the variances in the different treatment groups are the same (homogeneity of variance), and the relationship between the variables is linear (Field, 2013).

Target Population and Sample

The innovations that occur in engineering firms to solve practical problems or adapt to technological changes necessitate an understanding of the correlation between meaningful work and IWB mediated through employee engagement. The knowledge of the correlation between these constructs and the mediating role of employee engagement can help engineering firms understand how their leaders can encourage IWB. This section will discuss the population, the sample population, and the power analysis for the study.

Target Population

The population for this study consisted of engineers with at least three years of experience working in engineering firms in the United States. In most cases, middle-level engineering managers working in engineering firms have at least three years of work experience. According to Sayles (1993), middle-level managers are those employees whose job responsibilities involve building operating competencies that ensure work progresses seamlessly

between various departments by facilitating necessary trade-offs among the diverse parts of any working system. They (middle-level managers) take the initiative, painstakingly working through the required changes in both staff and line functions to produce an improved product or process (Sayles, 1993). This population was chosen because their job responsibilities involve building a corporation's operating competencies and working through line functions to produce improved products or innovations.

Sample Population

SurveyMonkey identified the sample population through convenience sampling. The sample population's inclusion criterion restricted SurveyMonkey to randomly select participants from engineers with at least three years' experience working in engineering firms in the United States. Engineers with less than three years' experience working in engineering firms in the United States, or engineers not working in engineering firms or in the United States were excluded from the study.

Power Analysis

G* Power was utilized to determine the size of the sample population. As reported by Faul et al. (2009), the G*Power 3.0.10 software includes various statistical tests to determine the sample size for correlational and regression analyses. The sample population was computed as 74 using a priori power analysis with $\alpha = 0.05$ and $\beta = 0.95$. As stated in Faul et al. (2009), in a priori power analyses, the sample size N is computed as a function of the required power level ($1 - \beta$), the prespecified significance level (α), and the population effect size to be detected with probability ($1 - \beta$). The power ($1 - \beta$) of a statistical test is the complement of β , which denotes the Type II or beta error probability of falsely retaining an incorrect H_0 (Faul et al., 2009).

The empirical studies that have used this method in the past to compute the sample size include (a) the study to examine the relationship between the employees' motivation to undertake entrepreneurship and innovative behavior (Jaaffar et al., 2018), (b) the research that proposed and tested a moderated mediation model that examined the hypothesized positive influence of servant leadership on employee IWB via meaningful work (Cai et al., 2018), and (c) the study that investigated the role of situational job autonomy and momentary work engagement as day-level correlates of innovative behavior (Orth & Volmer, 2017).

Procedures

This section describes the procedures vital in the execution of all study methods to examine the impact of meaningful work on IWB mediated through employee engagement. The objective of describing these procedures is to allow future researchers to reproduce this study. The section that follows discusses (a) participant selection, (b) protection of participants, (c) data collection, and (d) data analysis.

Participant Selection

SurveyMonkey was contracted as a third party to select a sample from a population of engineers with at least three years' experience working in engineering firms in the United States. This population was chosen because the roles of engineers with at least three years' experience (or middle-level managers) involve innovation. Sayles (1993) asserted that middle-level managers take the initiative, painstakingly working through the required changes in both staff and line functions to produce improved products or processes. The participants' selection was made through convenience sampling since the researcher conveniently selected individuals invited to participate. The inclusion criteria (engineers with at least three years' experience working in engineering firms in the United States) was enforced by SurveyMonkey. The

inclusion criteria and the screening questions were given to SurveyMonkey by the researcher. SurveyMonkey used the inclusion criteria to screen potential participants to ensure they met the requirements to participate in the research. Engineers with less than three years' experience or engineers not working in engineering firms in the United States were excluded from the study. G*Power was used to compute the size of the sample population.

Protection of Participants

The data was collected by SurveyMonkey through a secure website using a questionnaire. The first page of the questionnaire contained the informed consent, and participants were required to acknowledge by selecting "No" or "Yes." The participants who chose "No" were thanked and exited the survey, while those who selected "Yes" participated in the survey. Also, the informed consent provided participants with information on the risks and benefits of the study. Further, participants received information on the expected time to complete the survey before participating in the study.

The demographic information collected was the firm where the participant was employed and the role at the firm. This demographic information was insufficient for use in identifying the participants. Any information that could aid anybody in identifying the participant was not collected. SurveyMonkey's data was downloaded to the researcher's personal computer and protected by a strong password. The researcher's personal computer containing the research data was stored in a locked cabinet. Following the Capella University guidelines, the information from SurveyMonkey will be destroyed permanently after seven years.

Data Collection

SurveyMonkey was contracted to collect data from engineers with at least three years' experience working in engineering firms in the United States by distributing closed-ended survey questionnaires. The survey questionnaire consisted of the informed consent on the first page, which provided information on the study's purpose, what will happen during the survey, and its duration. The informed consent also provided information on the study's potential risks and explicitly stated that there would be no compensation for participating in the survey. Participants were required to acknowledge the information in the informed consent by selecting "Yes" before participating in the survey. Participants who declined to accept the informed consent by selecting "No" exited the survey.

The survey questionnaire contained three sections that included the six items for measuring IWB (Scott & Bruce, 1994), the Utrecht Work Engagement Scale for measuring employee engagement (Schaufeli et al., 2002), and the Work and Meaningful Inventory instrument for measuring meaningful work (Steger et al., 2012). SurveyMonkey collected the participants' responses, and the questionnaires with corresponding responses were downloaded onto the researcher's personal computer. After statistical analysis, the researcher's laptop will be stored in a locked cabinet, and the hard drive of the laptop will be destroyed after seven years.

Data Analysis

The study investigated the impact of meaningful work on IWB mediated through employee engagement and viewed through the lens of expectancy theory. The study investigated the correlation between meaningful work and employee engagement. The study also investigated the correlation between employee engagement and IWB by computing the Pearson correlation

coefficient. The significance level or *P*-value was computed based on the Pearson Correlation and compared with the significance level of .05 to test the null hypothesis.

Descriptive Statistics

The analysis of the data was done using SPSS. The initial stage of preparing the data for analysis involved summarizing the data by determining the mean, mode, median, variance, and standard deviation. The second stage involved the graphical representation of histograms and frequency distribution, which provided a visual depiction of outliers, missing data, kurtosis, skewness, and the standard error in the distribution. The data from SurveyMonkey was loaded into the SPSS software, and the probability–probability (P-P plot) graphs were sketched to check whether the data were normally distributed. The ZPRED and ZRESID scatter plots were also sketched to illustrate the variables' homoscedasticity in the relationship between meaningful work and employee engagement and IWB and employee engagement.

The regression analysis assumed that the data collected were normally distributed. The normality assumption originates from the frequency distributions where data is symmetrically distributed around the center of all scores (Field, 2013). The normality of the data collected was tested by the Kolmogorov–Smirnov (K-S) and Shapiro–Wilk tests that compare the scores in the sample to a normally distributed set of scores mean and standard deviation (Field, 2013). Also, plotting the probability–probability (P-P plot) graphs were used to check whether the data were normally distributed.

According to Field (2013), the Levine test checked the homogeneity assumption. Homogeneity of variance refers to similar variances in the different treatment groups. Also, the linear assumption means that scores on the outcome variable are collinear to any predictors; and the effect of several predictors is a summation of their effects. Linearity was tested by plotting

standardized residuals against standardized predicted values. If these assumptions were not met, it could have required the researcher to consider another technique or a different set of data.

Hypotheses Testing

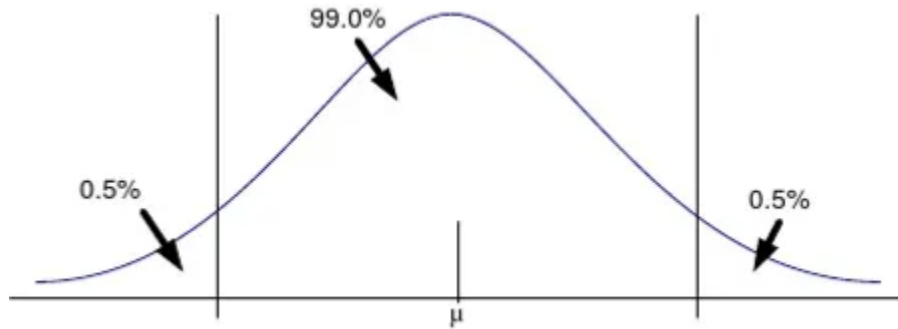
Park (2015) suggested that hypothesis testing is a scientific process to investigate if a hypothesis is credible or not. In the study to examine the impact of meaningful work on IWB mediated through employee engagement, the p-value was computed based on the Pearson correlation coefficient test statistic. The p-value was then compared with the significance level of .05. If the p-value is smaller than the significance level, the researcher will reject the null hypothesis.

Park (2015) suggested that a p-value is considered as the amount of risk that researchers take when rejecting the null hypothesis. A test's size, often called significance level, is the probability of committing a Type I error. A Type I error occurs when a null hypothesis is disregarded when it is true.

Figure 3 shows the test size or significance level in a two-tailed test. The significance level is the sum of two symmetric areas of both tails of a probability distribution.

Figure 3

Two-Tailed Test



As stated in Park (2015), these symmetric areas are sometimes called the rejection regions because researchers reject the null hypothesis if a test statistic falls into these regions.

The following hypotheses were tested in this study:

- H_0 : There is no statistically significant correlation between meaningful work and IWB mediated through employee engagement.
- H_a : There is a statistically significant correlation between meaningful work and IWB mediated through employee engagement.

The hypotheses testing occurred using the Pearson's Correlation Coefficient. As reported by Field (2013), Pearson correlation coefficient (denoted by r) is a statistic for measuring the strengths of linear association between two continuous variables. The values of Pearson correlation coefficient (r) range between -1 and 1, where a value of 1 means the two variables have a perfect correlation. The value zero means the variables have no correlation, and a value of -1 means the variables have a perfect negative correlation. The Pearson correlation coefficient was calculated using the formula below:

$$r = \frac{\sum_j (v_j - \bar{v})(u_j - \bar{u})}{\sqrt{\sum_j (v_j - \bar{v})^2} \sqrt{\sum_j (u_j - \bar{u})^2}} \quad (1)$$

where u and v were the variables used to represent IWB, meaningful work, and employee engagement variables in the Pearson correlation coefficient test statistic. Since the number of participants was high ($N=98$), the data was loaded into the SPSS Software, and the Pearson correlation coefficient was computed.

The computation for Pearson correlation coefficient (r) was computed based on the Meaningful Work (MW) and employee engagement (EE) variables. The p-value was also computed based on this Pearson correlation coefficient test statistic. The p-value was then compared with the significance level of .05. If the p-value was smaller than the significance level, the researcher rejected the null hypothesis H_0 . Also, the Pearson correlation coefficient was computed using Innovative Work Behavior (IWB) and employee engagement (EE) variables. The p-value was computed based on the Pearson correlation coefficient test statistic. The p-value was then compared with the significance level of .05. If the p-value was smaller than the significance level, the researcher rejected the null hypothesis H_0 .

Instruments

The study to examine the impact of meaningful work on IWB mediated through employee engagement used three instruments to collect data from participants. The Work and Meaningful Inventory instrument was used to evaluate the variables of meaningful work (Steger et al., 2012), the Utrecht Work Engagement Scale measured the variables in the work engagement construct (Schaufeli et al., 2002), and the six items published in Schaufeli et al.

(2002) measured the variables of IWB. This section of the dissertation describes each instrument used to collect data for the study.

Work and Meaning Inventory

The Work and Meaning Inventory was used to measure the variables in meaningful work. This self-reported instrument consists of 10 items, and participants responded to these items using a 5-point Likert-type scale ranging from *Absolutely untrue* to *Absolutely true* (Steger et al., 2012). The variables being evaluated by the Work and Meaningful Inventory instrument included positive meaning, meaning making through work, and greater good motivation. This instrument was available for use in scholarly research. Therefore, researcher did not need to request permission to use this instrument to measure the variables in meaningful work.

Validity

The Work and Meaning Inventory was utilized to measure meaningful work variables (Steger et al., 2012). The Work and Meaning Inventory correlated positively to desirable work variables and correlated negatively to undesirable variables of work (Steger et al., 2012). These findings are consistent with other findings in this field of study.

Reliability

The Work and Meaning Inventory was investigated using 370 university employees representing diverse age-groups and occupations (Steger et al., 2012). In this study, the Work and Meaning Inventory was designed to produce meaningful work that incorporated the three facets of meaningful work (greater good, positive meaning, and contribution to meaning making). The results showed that these meaningful work facets were internally consistent in the total sample of 370, with Cronbach alpha coefficients of .89 for positive meaning, .82 for

meaning-making through work, and .83 for greater-good. The total Meaningful Work scale internal consistency was high since it had a Cronbach's alpha of .93 (Steger et al., 2012).

As stated in Vaske et al. (2017), Cronbach's alpha (α) estimates the items' internal consistency in a measurement instrument scale. The Cronbach Alpha measures the extent to which item responses to survey questions correlate with each other. These statistic values range from 0.00 to 1.00, but a negative α value can occur when the items are not positively correlated among themselves. By convention, an alpha of .65–.80 is often considered adequate for a scale used in human dimensions research (Vaske et al., 2017).

Utrecht Work Engagement Scale

To investigate the variables of work engagement, the Utrecht Work Engagement Scale was utilized (Schaufeli et al., 2002). The Utrecht Work Engagement Scale measures the positive work-related state of fulfillment characterized by vigor, dedication, and absorption. Vigor refers to high energy levels, resilience, and motivation to undertake activities (Brummelhuis & Bakker, 2012). Dedication refers to being deeply engaged in one's work and experiencing the feeling of importance, excitement, motivation, dignity, and challenge (Schaufeli et al., 2002). The absorption variable is characterized by being fully concentrated and happily engrossed in one's work, where time passes quickly, and one has difficulties with detaching oneself from work (Schaufeli et al., 2002). This instrument was available for use in scholarly research. Therefore, researcher did not need to request permission to use this instrument to measure the variables in work engagement.

Validity

The Utrecht Work Engagement Scale (short version) measures work engagement, which refers to a positive work-related state of fulfillment characterized by vigor, dedication, and absorption. In developing this instrument, data were collected in 10 different countries ($N=14,521$), and results indicated that the original 17-item Utrecht Work Engagement Scale (UWES) could be shortened to 9 items (Schaufeli et al., 2002). The UWES (9 items) factorial validity was demonstrated using confirmatory factor analyses (Schaufeli et al., 2002).

Reliability

The instrument was normed for a population consisting of men and women over 18 years of age. The UWES (9 items) consists of a list of nine questions scored on a 7-point frequency rating scale ranging from 0 representing *Never* to 6 representing *Always/every day* (Schaufeli et al., 2002). This instrument's internal consistency includes a Cronbach's alpha for the total 9-item scale that varied between .85 and .92 (median = .92) across all ten countries used for norming the measure (Schaufeli et al., 2002).

Innovative Work Behavior

Innovative Work Behavior was measured by the scale developed by Scott and Bruce (1994), and the permission to use this instrument was granted by Dr, Scott. The instrument assesses the innovative behavior of employees. The scale consists of six items and utilizes a 5-point Likert-type scale ranging from 1 representing *Not at all* to 5 representing *To an exceptional degree*.

Validity

De Jong and Den Hartog (2007) investigated the validity of the IWB instrument by utilizing a survey data from 73 matched dyads of knowledge workers and their supervisors in knowledge intensive forms. The investigated tested the hypothesized relationship of IWB with related constructs using confirmatory analysis and hierarchical multilevel regressions. The results showed that the Scott and Bruce (1994) instrument was valid in measuring IWB.

Reliability

According to De Jong and Den Hartog (2007), the Cronbach's alpha for the IWB was .89 in a sample of technicians, engineers, and scientists employed in a large-centralized research and development facility of a major industrial corporation in the United States. The Cronbach's alpha values range from 0.00 to 1.00, but a negative α value can occur when the items are not positively correlated among themselves. By convention, an alpha of .65–.80 is often considered adequate for a scale used in human dimensions research (Vaske et al., 2017).

Ethical Considerations

The data was collected by SurveyMonkey using a secure website. The secure website facilitated establishing a secure connection between the client and the server to protect sensitive information such as participants' identification details. The secure website also acted as a deterrence to would-be hackers, which enhanced participants' trust in taking the survey.

The participants were protected by informed consent, which required them to acknowledge the risks, benefits, and expected completion time before participating. The informed consent was delivered to the participants on the first page of the questionnaire, and participants were required to acknowledge by selecting “No” or “Yes.” The participants who chose "No" were thanked and exited the survey, while those who selected "Yes" participated in

the survey. The survey was a minimal risk study, and any discomfort experienced by the participant was not greater than the discomfort participants experience in their daily lives. Also, participation in this survey was voluntary, and participants could stop participating at any time.

The demographic information collected was from the firm where the participant was employed. Also, the participant's role in the firm was collected. This demographic information was insufficient for anybody to use in identifying the participants. Any information that could aid anybody in identifying the participant was not collected. SurveyMonkey's data was downloaded to the researcher's personal computer, which had a strong password, and it was stored in a locked cabinet. Also, the transmission of information over the internet was done by encrypting the data. Per the Capella University guidelines, the information from SurveyMonkey will be destroyed permanently after seven years.

Summary

This chapter described the quantitative correlational study to examine the relationship between meaningful work and IWB mediated through employee engagement. The chapter also explained the purpose of the study, research questions and hypotheses, and research design. The population for this study was middle-level engineering managers in engineering firms in the United States. This population was chosen because their job responsibilities involved building corporations' operating competencies and working through line functions to produce improved products or innovations. SurveyMonkey was contracted as a third party to select a pre-determined sample from this population, administer the survey and collect data.

Three instruments were utilized in measuring meaningful work, employee engagement, and IWB. The Work and Meaning Inventory measured meaningful work, Utrecht Work Engagement Scale measured employee engagement, and IWB was measured by the six items

developed by Scott and Bruce (1994). The validity and reliability of the instruments were established. Further, the chapter discussed steps that were taken to safeguard participants' personal information. The following Chapter 4 will discuss in detail the results of the study, discuss the background of the study, and provide a description of the sample.

CHAPTER 4. RESULTS

The quantitative correlational study examined the relationship between meaningful work, employee engagement, and IWB. Earlier, Chapter 3 described the purpose of the study and provided a method for collecting data. Chapter 4 moves a step further to include data analysis. This chapter will cover the description of the sample and the hypotheses testing. The section on hypotheses testing will evaluate the data to determine whether to accept or reject the null hypothesis.

Background

The quantitative correlational study examined the relationship between meaningful work, employee engagement, and IWB. Earlier, Chapter 3 described the purpose of the study and provided a method for collecting data. Chapter 4 moves a step further to include data analysis. This chapter will cover the description of the sample and the descriptive statistics. The section will also cover the research assumptions (normality, linearity, and homogeneity) and the hypotheses testing. The section on hypotheses testing will evaluate the data to determine whether to accept or reject the null hypothesis.

Description of the Sample

The sample population for this quantitative correlational study included engineers with at least three years of experience working in engineering firms in the United States. The demographic information that could identify participants was not collected. Also, participants' age, gender, or race was not collected. Potential participants with less than three years' experience working in engineering firms in the United States or engineers not working in engineering firms or the United States were excluded from the study. SurveyMonkey provided a random sample of the participants who met the inclusion criteria.

G* Power determined the size of the sample population. G*Power 3.0.10 software includes various statistical tests to determine the sample size for correlational and regression analyses (Faul et al., 2009). The sample population was computed as 74 using a priori power analysis with $\alpha = 0.05$ and $\beta = 0.95$. The random sample by SurveyMonkey meeting the study's inclusion criteria resulted in a sample size of $N = 98$, which was 132% of the sample population estimated by G*Power. The criteria for selecting the participants were based on a question that required prospective participants to disclose the number of years of experience working as an engineer. The engineers with at least three years' experience could participate in the survey. The criteria for selecting the random sample were intended to provide engineers who initiate projects and work through the required changes in both staff and line functions to produce improved products or processes.

Descriptive Statistics

Descriptive statistics are used to summarize data in an organized manner by explaining the connection between variables in a sample population (Kaur et al., 2018). Evaluating descriptive statistics denotes a crucial first step when conducting research and should always occur before making inferential statistical comparisons (Kaur et al., 2018). In essence, the researcher can analyze a specific sample population since descriptive statistics is able to condense data into a simplified summary. The data in the study to examine the impact of meaningful work on IWB mediated through employee engagement were summarized by determining the mean, mode, median, variance, and standard deviation. This initial stage of data summarization was important because it is not easy to analyze raw data. Also, the process of summarizing data can highlight potential relationships between variables.

Mean, Mode, Median, Variance, and Standard Deviation

Table 1 shows a sample population of 98 with the mean, median, mode, and standard deviation of meaningful work (MW), employee engagement (EE), and innovative work behavior (IWB). The survey utilized a Likert scale for the meaningful work, employee engagement and IWB survey.

Table 1

Descriptive Statistics

Descriptive Statistics	MW	EE	IWB
Mean	3.7388	4.1508	3.7177
Median	3.8000	4.2222	3.8333
Mode	3.80	4.00	4.00
Std. Deviation	.78735	1.21677	.84219
Variance	.620	1.481	.709
Skewness	-1.303	-1.010	-1.223
Std. Error of Skewness	.244	.244	.244
Kurtosis	2.515	1.694	2.698
Std. Error of Kurtosis	.483	.483	.483
Range	4.00	6.00	4.33

The responses from participants showed that the mean, median, and mode were in the range of *Mostly true* on the Likert-type scale for meaningful work and IWB. The standard deviation and variance represent how the measurements spread from the mean. The low standard deviation and variance in this study denotes that the measurements have little spread from the mean. The table results also show negative values for skewness and non-zero values for kurtosis in the MW, EE, and IWB data. These non-zero values for skewness indicate that the distribution deviates from the symmetry, and non-zero values for kurtosis indicate that the MW, EE, and IWB data deviate from normality.

Research Assumptions

The study to examine the impact of meaningful work on IWB mediated through employee engagement was carried out, assuming that the data were normally distributed and linear. The study was also carried out with the homogeneity of variances assumption. The next section describes the tests done to find out if the data collected met these assumptions.

The Assumption of Normality

The correlational analysis assumed that the data collected were normally distributed. The normality assumption originates from the frequency distributions where data is symmetrically distributed around the center of all scores (Field, 2013). The normality of the data collected was tested by plotting a histogram with an added normal curve for meaningful work (MW), employee engagement (EE), and IWB. Also, the normality assumption was tested using the Kolmogorov–Smirnov (K-S) (Field, 2013). The results from these tests are illustrated in the following section on histograms.

Histograms

Figures 4, 5, and 6 show the histogram with an added normal curve for meaningful work (MW), employee engagement (EE), and innovative work behavior (IWB). This visual representation of data showed an extended tail on the left, indicating negative skewness for meaningful work, employee engagement, and innovative work behavior (MW, EE, and IWB data are non-symmetrical). A normal distribution has skewness of zero, and any symmetric data should have skewness near zero. Negative skewness (left tail is long relative to the right tail) indicate data that are skewed left and positive skewness (the right tail is long relative to the left tail) indicate data that are skewed right. The skewness characterizes the degree of asymmetry of the distribution around its mean.

Figure 4

Histogram for Meaningful Work (MW)

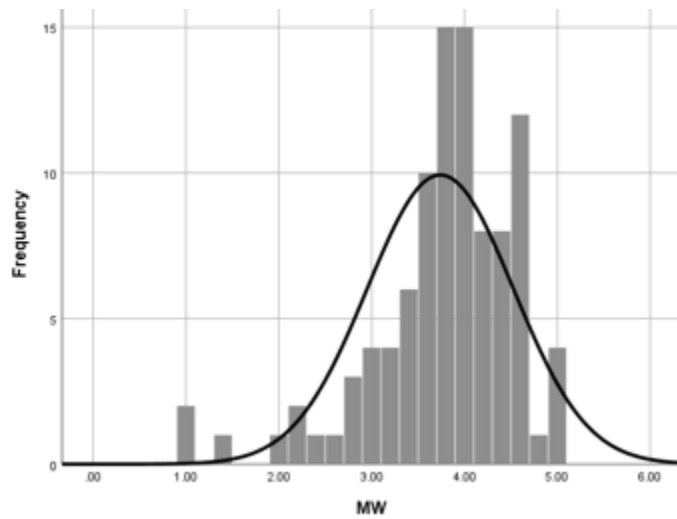


Figure 5

Histogram for Employee Engagement (EE)

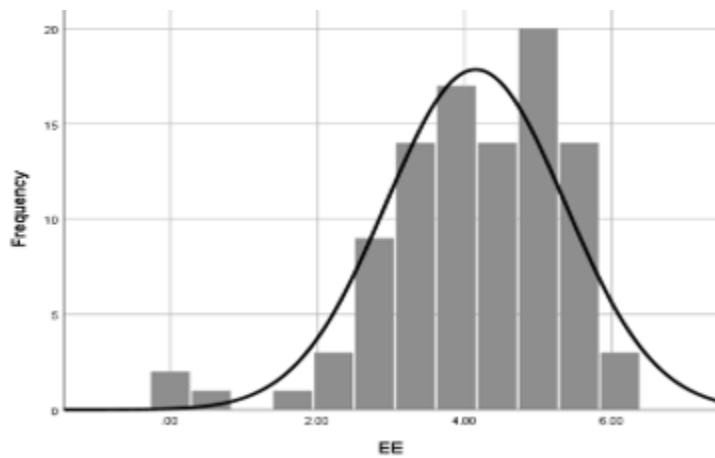
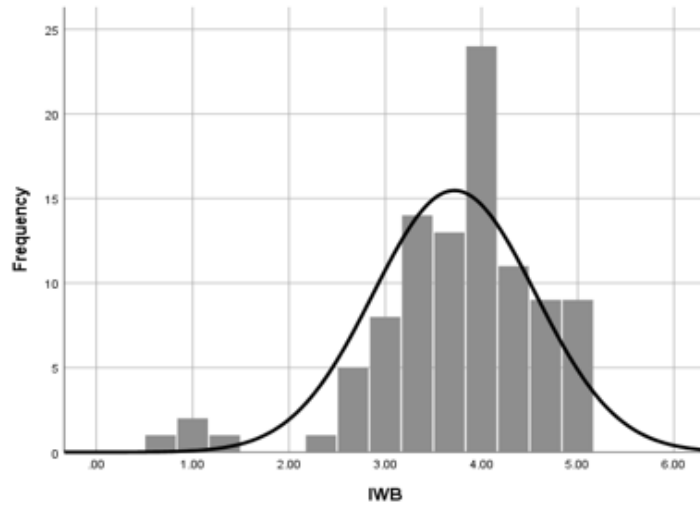


Figure 6

Histogram for Innovative Work Behavior (IWB)



The K-S Test for Normality

Normality was also investigated using the one-sample Kolmogorov-Smirnov test. The results of the test are tabulated below. In this test, the null hypothesis will be rejected when $P < 0.05$. Tables 2 and 3 show the results from the Kolmogorov-Smirnov test.

Table 2*Kolmogorov-Smirnov Test for Normality*

		EE	MW
<i>N</i>		98	98
Normal Parameters	Mean	4.1508	3.7388
	Std. Deviation	1.21677	.78735
Most Extreme Differences	Absolute	.074	.126
	Positive	.064	.086
	Negative	-.074	-.126
Test Statistic		.074	.126
Asymp. Sig. (2-tailed)		.200	.001

Table 3*Kolmogorov-Smirnov Test for Normality*

		IWB	EE
<i>N</i>		98	98
Normal Parameters	Mean	3.7177	4.1508
	Std. Deviation	.84219	1.21677
Most Extreme Differences	Absolute	.108	.074
	Positive	.073	.064
	Negative	-.108	-.074
Test Statistic		.108	.074
Asymp. Sig. (2-tailed)		.006 ^c	.200

The significance level for employee engagement (EE) is .200. Since $P > .05$ in this case, the null hypothesis (sample distribution is normal) is accepted and the distribution in EE is normally distributed. On the other hand, the significance for meaningful work (MW) and IWB is

.000. Since $P < 0.05$, the null hypothesis is rejected and the data distribution in MW and IWB are not normally distributed.

Assumption of Linearity

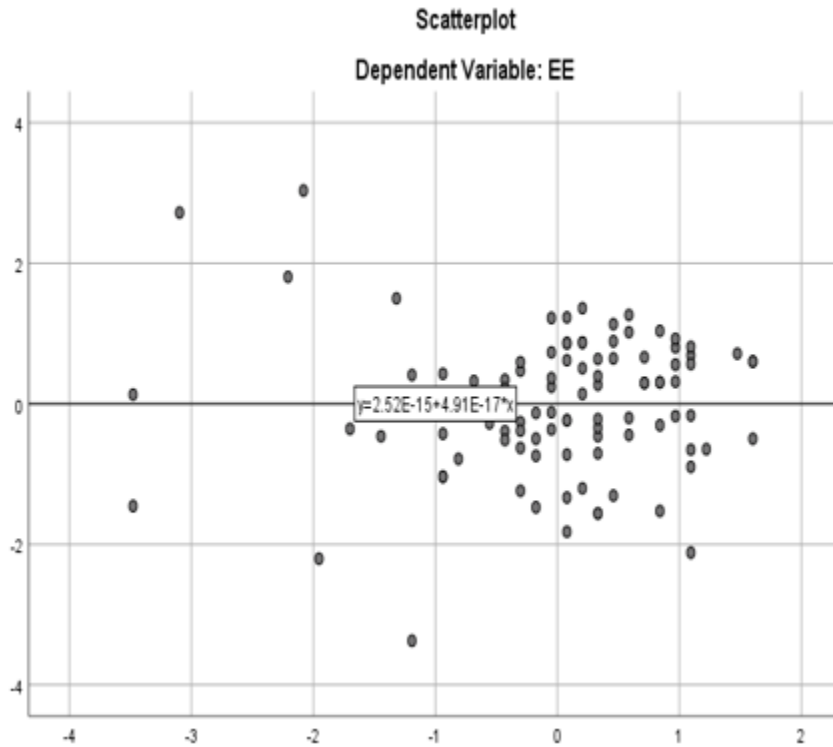
The linear assumption means that scores on the outcome variable are collinear to any predictors, and the effect of several predictors is a summation of their effects. Linearity was tested by plotting a scatter graph of the standardized residuals against standardized predicted values. The results of these scatter plots are shown below.

Scatter Plots

Figure 7 shows a scatter plot with meaningful work as the independent variable and employee engagement (EE) as the dependent variable. In this figure, an assessment of residual scatterplots is utilized to test the assumption of linearity. The scatter dots have no clear trend and no apparent relationship between the residuals and the predicted values which means that the assumption of linearity is met.

Figure 7

ZPRED and ZRESID Scatter Plot

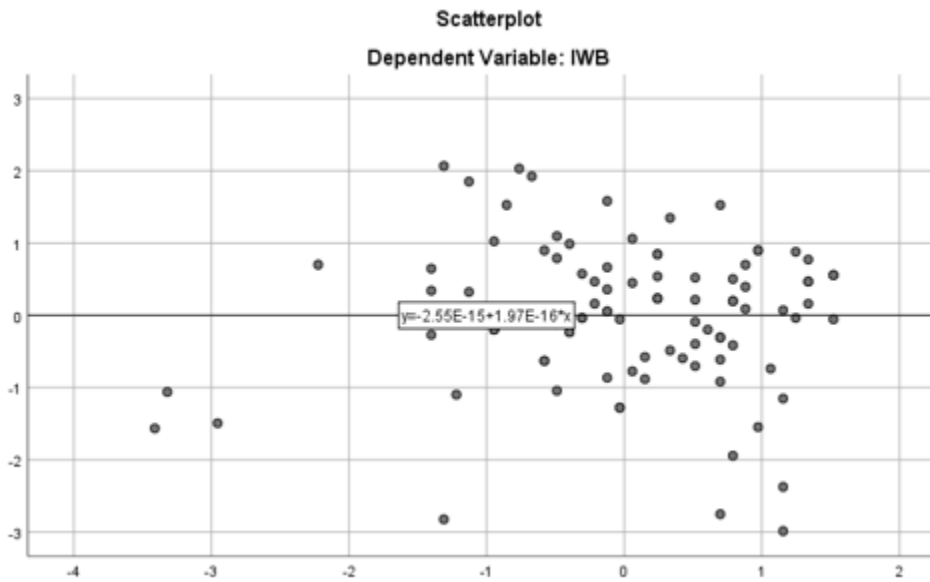


Also, most of the scatter dots are near the regression line with few scatter dots far away from the regression line which means that the linearity assumption is met. Since the relationship of standardized predicted to residuals is linear around zero, which the relationship between meaningful work and EE is linear.

Figure 8 shows a scatter plot with employee engagement (EE) as the independent variable and IWB as the dependent variable. As previously described, in Figure 5(b) an examination of residual scatterplots is utilized to test the assumption of linearity. The results show that the scatter dots are random with no apparent relationship between the residuals and the predicted values which means that the assumption of linearity is met.

Figure 8

ZPRED and ZRESID Scatter Plot



Also, most of the scatter dots are near the regression line with few scatter dots far away from the regression line which means that the linearity assumption is met. Since the relationship of standardized predicted to residuals is linear around zero, the relationship between EE and IWB is linear.

The ANOVA Test for Linearity

The linearity assumption in the study to examine the impact of meaningful work on IWB mediated through employee engagement was also investigated using the one-sample Kolmogorov-Smirnov test. Field (2013) suggested that the assumption of linearity is met when the predictor variables in the regression have a straight-line relationship with the outcome variable. The results of the investigation to determine whether the assumption of linearity has been met are illustrated in Tables 4 and 5.

Table 4*ANOVA Test for Linearity*

			Sum of Squares	df	Mean Square	F	Sig.
EE * MW	Between Groups	(Combined)	100.837	28	3.601	5.809	.000
		Linearity	64.050	1	64.050	103.320	.000
		Deviation from Linearity	36.787	27	1.362	2.198	.005
Within Groups			42.774	69	.620		
Total			143.611	97			

Table 5*ANOVA Test for Linearity*

			Sum of Squares	df	Mean Square	F	Sig.
IWB * EE	Between Groups	(Combined)	52.214	34	1.536	5.833	.000
		Linearity	40.265	1	40.265	152.935	.000
		Deviation from Linearity	11.949	33	.362	1.375	.138
Within Groups			16.587	63	.263		
Total			68.800	97			

Tables 4 and 5 show the ANOVA test results for linearity. In these results, the significance level of meaningful work (MW) and employee engagement (EE) is .00, which signifies linearity since $P < .05$. Also, linearity exists between EE and IWB. This means that the assumption of linearity is met since the predictor variable (meaningful work) has a straight-line relationship with the outcome variable (employee engagement). Also, the predictor variable (employee engagement) has a straight-line relationship with the outcome variable (IWB).

The Homogeneity Assumption

Homogeneity of variance refers to similar variances in the different treatment groups. The Levine test was utilized to test the homogeneity assumption. The null hypothesis in the Levine test is that all the groups being compared have equal population variances. The results of this test are tabulated in Tables 6 and 7.

Table 6

Levene Test for Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
EE	Based on Mean	2.740	15	79	.002
	Based on Median	1.598	15	79	.093
	Based on Median and with adjusted df	1.598	15	35.646	.124
	Based on trimmed mean	2.649	15	79	.003
MW	Based on Mean	1.815	15	79	.047
	Based on Median	.942	15	79	.523
	Based on Median and with adjusted df	.942	15	34.296	.530
	Based on trimmed mean	1.662	15	79	.076

Table 7*Levene Test for Homogeneity of Variances*

		Levene Statistic	<i>df1</i>	<i>df2</i>	Sig.
EE	Based on Mean	2.348	18	69	.006
	Based on Median	1.618	18	69	.079
	Based on Median and with adjusted df	1.618	18	40.879	.101
	Based on trimmed mean	2.264	18	69	.008
IWB	Based on Mean	2.709	18	69	.002
	Based on Median	1.577	18	69	.091
	Based on Median and with adjusted df	1.577	18	29.262	.133
	Based on trimmed mean	2.613	18	69	.002

Tables 6 and 7 show the results of the Levene test on meaningful Work (MW), employee engagement (EE), and IWB. Field (2013) asserted that Levene's test uses an *F*-test to test the null hypothesis that the variance is equal across groups. A significance value (*p*) less than .05 indicates a violation of the homogeneity assumption. The significance level for EE based on the mean is .002, the significance level of MW based on the mean is .047, and the significance level of IWB based on the mean is .002. In both these cases, the significance value $p < 0.05$ and the null hypothesis is rejected. Therefore, the homogeneity of variances assumption is not met for MW, EE, and IWB based on their respective mean.

However, the results indicate that the significance level $p > .05$ for EE and IWB when the Levene test is based on the median. Also, the results indicate that the significance level $p > .05$ for MW when the Levene test is done based on median and trimmed mean. In these cases, the

null hypothesis is accepted, and the homogeneity of variances assumption is met for MW, EE, and IWB.

Sample Analysis and Power Analysis Assumption

The sample population's inclusion criterion restricted SurveyMonkey to randomly select participants from engineers with at least three years' experience working in engineering firms in the United States. This population was selected with the assumption that their job responsibilities involve building a corporation's operating competencies and working through line functions to produce improved products or innovations. G* Power was utilized to determine the size of the sample population. The G*Power 3.0.10 software includes various statistical tests to determine the sample size for correlational and regression analyses (Faul et al., 2009).

The sample population was computed as 74 using a priori power analysis with $\alpha = 0.05$ and $\beta = 0.95$. The sample drawn from the population must be representative allowing the researcher to make inferences from the sample statistics to the population under study (Chuan & Penyelidikan, 2006). The sample will lack the precision to provide reliable answers to research questions being investigated if the sample is too small. On the other hand, time and resources could be wasted often for minimal gain if the sample size is too large. Chuan and Penyelidikan (2006) suggested that the power of a sample survey is the ability to obtain the necessary information from a relatively few respondents to describe the characteristics of the entire population. The selection of a sample size of 74 participants assumed that the sample drawn from the population was a sufficient representation allowing the researcher to make inferences from the sample statistics to the population under study.

Missing Data

Table 8 provides information for missing data in the data collected for meaningful work (MW), employee engagement (EE), and IWB. It can be seen from this table that no data was missing from these variables

Table 8

Missing Data

		MW	EE	IWB
<i>N</i>	Valid	98	98	98
	Missing	0	0	0

Peugh and Enders (2004) asserted that some researchers deal with missing data by removing (deleting) all the cases with missing data or substituting missing values with the variable mean. Since there were no missing data, none of these methods suggested by Peugh and Enders (2004) applied to the MW, EE, and IWB data. Therefore, no required deletion of cases or data conversion occurred, and the data met the missing data assumption of no missing data.

Outliers

Figures 9, 10, and 11 show the outliers in meaningful work (MW), employee engagement (EE), and IWB data, respectively. As reported by Kwak and Kim (2017), outliers are data points lying far away from most other data points, and outliers in the data that are not normally distributed do not require identification. As indicated earlier in the discussion of descriptive statistics, the data collected had non-zero values for skewness, indicating that the distribution deviates from symmetry and non-zero values for kurtosis indicate the MW, EE, and IWB data deviates from the normality. Therefore, the outliers in this study were not trimmed or replaced with expected values.

Figure 9

Meaningful work (MW) Outliers

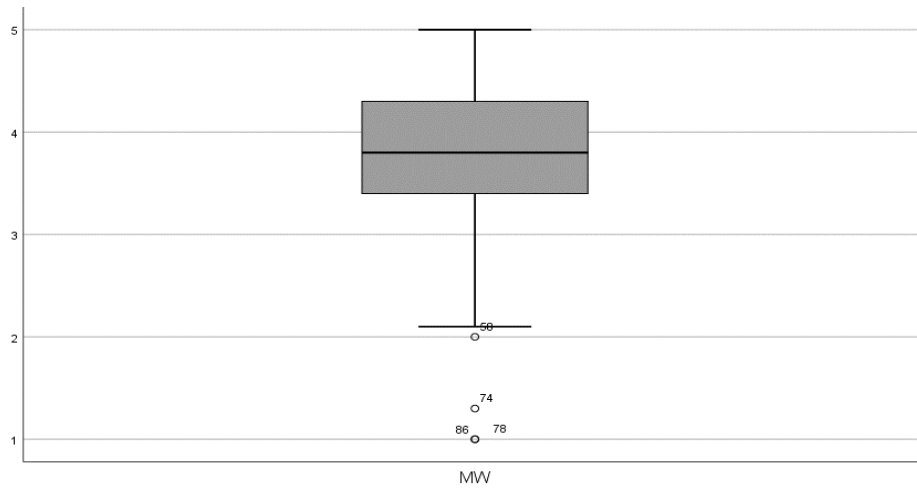


Figure 10

Employee Engagement (EE) Outliers

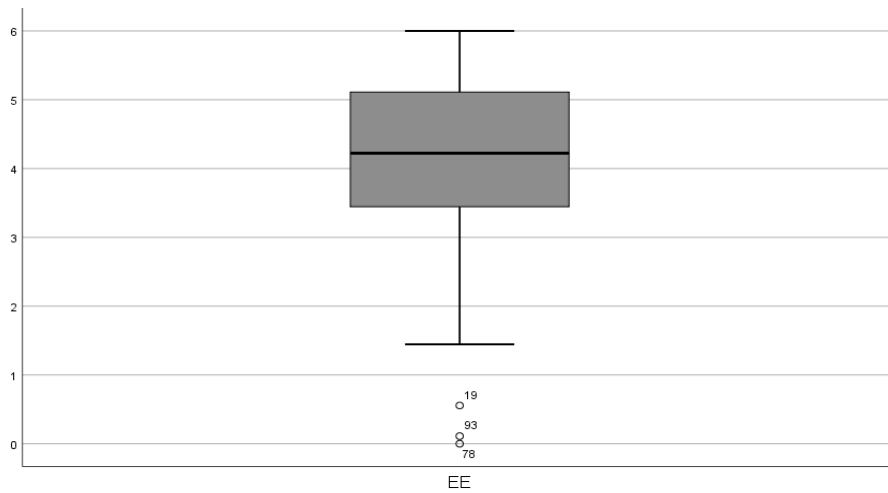
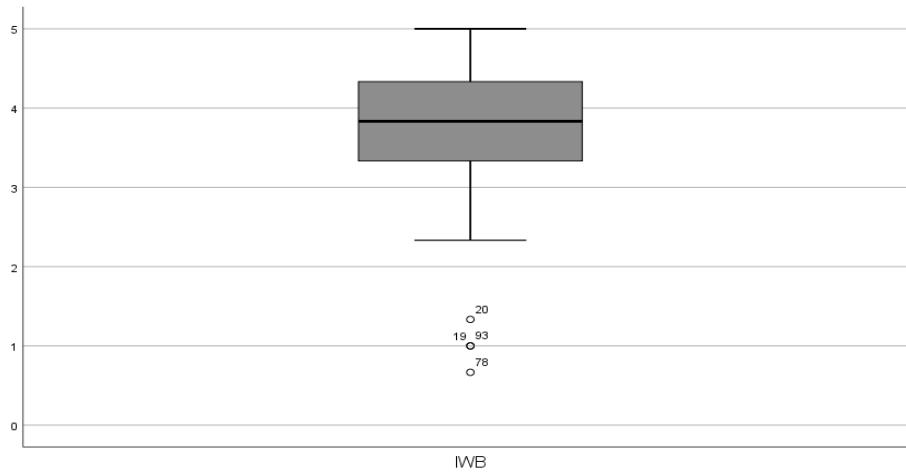


Figure 11

IWB Outliers



Hypothesis Testing

As mentioned earlier in Chapter 3, hypothesis testing was done using the Pearson's Correlation Coefficient. The Pearson correlation coefficient is a statistic for measuring the linear association's strengths between two continuous variables (Field, 2013). The Pearson correlation coefficient values (r) range between -1 and 1, where a value of 1 means the two variables have a perfect correlation. The value zero means the variables have no correlation, and a value of -1 means the variables have a perfect negative correlation. The research question and hypotheses for the study to examine the impact of meaningful work on IWB mediated through employee engagement are listed below.

- RQ1: What is the impact of meaningful work on IWB mediated through employee engagement of engineers with at least three years' experience working in engineering firms in the United States?
- H_0 : There is no statistically significant correlation between meaningful work and IWB mediated through employee engagement.

- Ha: There is a statistically significant correlation between meaningful work and IWB mediated through employee engagement.

Although the Pearson correlation coefficient can be manually calculated using the formula discussed earlier in Chapter 3, it would be a tedious process, especially since 98 participants were involved in the study. Therefore, the data was loaded into the SPSS Software, and the Pearson correlation coefficient was computed. Tables 9 and 10 show the results of the Pearson correlation coefficient results.

Table 9

Pearson Correlation Coefficient for MW and EE

		MW	EE
MW	Pearson Correlation	1	.668
	Sig. (2-tailed)		.000
	<i>N</i>	98	98
EE	Pearson Correlation	.668	1
	Sig. (2-tailed)	.000	
	<i>N</i>	98	98

Table 10*Pearson Correlation Coefficient for EE and IWB*

		EE	IWB
EE	Pearson Correlation	1	.765
	Sig. (2-tailed)		.000
	N	98	98
IWB	Pearson Correlation	.765	1
	Sig. (2-tailed)	.000	
	N	98	98

Table 9 shows that meaningful work (MW) has a strong positive correlation ($r = .668$) with employee engagement (EE). The positive correlation means that employee engagement can be increased by making work more meaningful to employees. Also, Table 10 shows that employee engagement (EE) has a strong positive correlation ($r = .765$) with IWB. The positive correlation means that an increase in employee engagement can increase IWB. Therefore, providing meaningful work can increase employee engagement which subsequently increases IWB. The significance value is zero in the relationship between meaningful work and employee engagement, and in the relationship between employee engagement and IWB. Since $P < .05$, the null hypothesis was rejected. This means that there was a statistically significant correlation between meaningful work and IWB mediated through employee engagement.

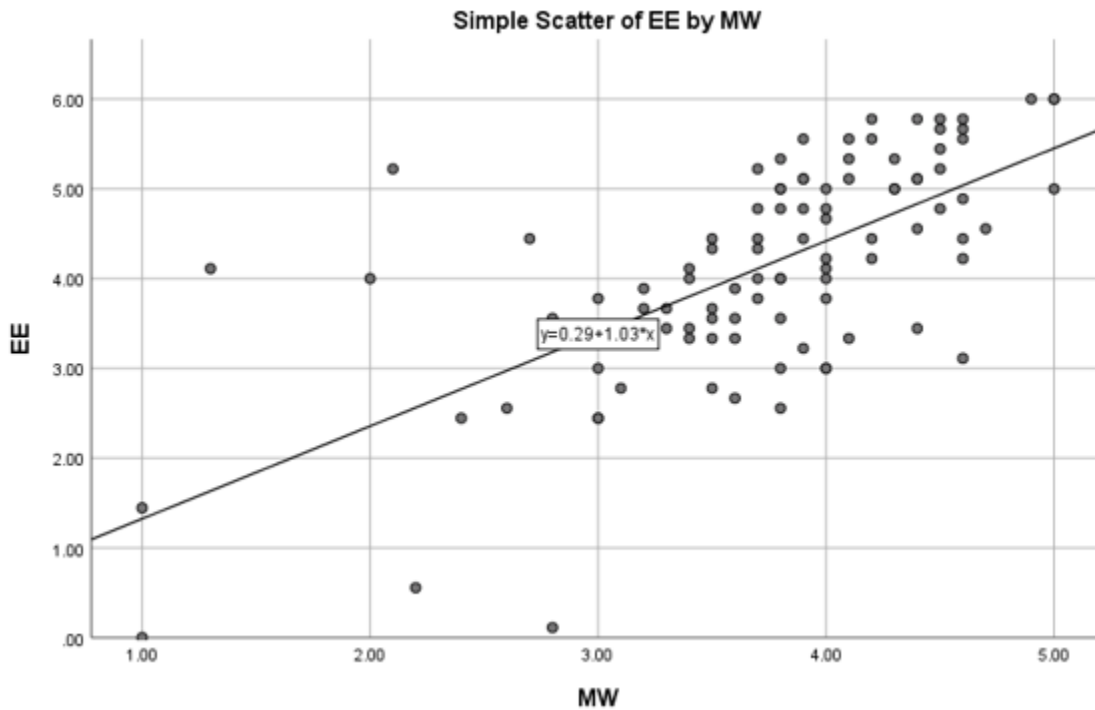
Correlation Results From Scatter Plots

The scatter plot in Figure 12 provides a visualization of the correlation between meaningful work (MW) and employee engagement (EE). The best line of fit has a positive slope

which indicates that meaningful work is positively correlated to employee engagement, which means that an increase in meaningful work can cause an increase in employee engagement.

Figure 12

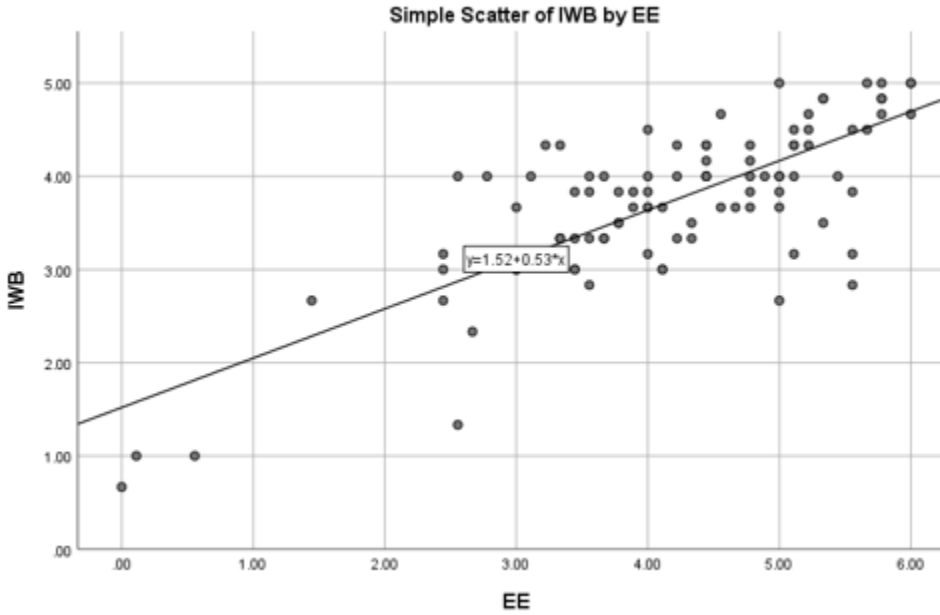
Scatter Plot for Meaningful Work and Employee Engagement



Similarly, the scatter plot in Figure 13 provides a visualization of the correlation between employee engagement (EE) and IWB. The best line of fit has a positive slope which indicates that employee engagement is positively correlated to IWB, which means an increase in employee engagement can cause an increase in IWB.

Figure 13

Scatter Plot for Employee Engagement and Innovative Work Behavior



It is important to note that an increase in meaningful work causes an increase in employee engagement which subsequently causes an increase in IWB. Therefore, the scatter plots in Figures 12 and 13 provides a visual representation of the role of employee engagement (mediator) in the correlation between meaningful work and IWB. It can also be deduced from the scatter plots that the correlation between the pairs (MW/EE and EE/IWB) is substantial.

Hypotheses Testing Summary

The significance level in both pairs (MW/EE and EE/IWB) is $P = .00$ as illustrated in Tables 9 and 10. Since $P < .05$, the null hypothesis (there is no statistically significant correlation between meaningful work and IWB mediated through employee engagement) is rejected. Therefore, there is a statistically significant correlation between meaningful work and IWB mediated through employee engagement. Table 11 shows the summary of these results.

Table 11

Null and Alternate Hypotheses and Results

Null Hypothesis	Alternate Hypothesis	Results
There was no statistically significant correlation between meaningful work and IWB mediated through employee engagement.	There was a statistically significant correlation between meaningful work and IWB mediated through employee engagement.	The null hypothesis was rejected, and the alternate hypothesis was accepted since $P < .05$.

Summary

Chapter 4 discussed the study results to examine the impact of meaningful work on IWB mediated through employee engagement. The quantitative correlational study utilized a survey questionnaire administered by SurveyMonkey to a population of 98 participants. The study participants were randomly selected from engineers with at least three years' experience working in engineering firms in the United States. Although G*Power estimated a sample of 74 participants, a total of $N = 98$ engineers participated in the study.

The results that were obtained were summarized and loaded into the SPSS software for analysis. The initial analysis was descriptive statistics which showed that the data was negatively skewed, and the non-zero kurtosis showed that the data was non-symmetrical. The data were tested for the study's assumptions, including linearity, normality, and homogeneity of the variances. ZPRED was plotted against ZRESID to test for linearity; the Kolmogorov-Smirnov tested normality, and the Levene test investigated homogeneity.

The Pearson correlation coefficient and scatter plots were utilized to find the correlation between meaningful work, employee engagement, and IWB. It was established that meaningful work had a strong positive correlation with employee engagement. Subsequently, it was established that employee engagement has a strong positive relationship with IWB. The

significance level for correlation between meaningful work and employee engagement was .00. Also, the significance level for the correlation between employee engagement and IWB was .00. Since $P < .05$, the null hypothesis was rejected. Therefore, there is a statistically significant correlation between meaningful work and IWB mediated through employee engagement.

Chapter 5 will discuss the implications and recommendations of the study. This section will summarize the results, discuss the results, and offer a conclusion based on the results. Further, the section will also discuss the study's limitations, implications for practice, and further research recommendations.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

Chapter 5 presents an interpretation of the study's statistical findings to examine the impact of meaningful work on employee engagement mediated through IWB. This quantitative correlational study intended to investigate the impact of meaningful work on employee engagement and the subsequent impact on IWB. This section will summarize the results, discuss the results, and offer a conclusion based on the results. This chapter will also discuss the study's limitations, implications for practice, and further research recommendations.

Summary of the Results

This section recapitulates the research problem and explains the study's significance. Also, the section describes the literature review and the methodology. Further, the section summarizes the findings in the study to examine the impact of meaningful work on IWB mediated through employee engagement.

Research Problem

The quantitative correlational study originated from what seemed like a knowledge gap in the topical area of innovation. Innovation involves integrating both dimensions of the creative process to transform known or new ideas into viable products required by individuals to ensure sustainable growth (Buta, 2019). In keeping with Zaidi et al. (2017), innovation is dependent on IWB.

The literature on the research topic indicates that employees who experience meaningful work are intrinsically motivated (Amabile & Pratt, 2016). Consequently, they show a positive attitude in innovatively addressing challenges and problems (Yidong & Xinxin, 2013). Similarly, Hirschi (2012) asserted that meaningful work could nurture an environment where engagement levels would be higher. Meaningfulness contributes to a positive attitude towards work and can

lead to higher engagement levels (Hoole & Bonnema, 2015). Further, work engagement positively predicts innovative employee behavior (Orth & Volmer, 2017), and servant leadership had a positive influence on meaningful work, which positively impacted IWB (Cai et al., 2018)

Although researchers have determined the relationship between meaningful work and IWB, meaningful work and employee engagement, and IWB and employee engagement, we did not have a single study investigating the relationship between meaningful work, employee engagement, and IWB. Therefore, this research examined the impact of meaningful work on IWB mediated through employee engagement.

Significance of the Study

The quantitative correlational study contributed to understanding the relationship between meaningful work, employee engagement, and IWB, as viewed through the expectancy theory. Prior research determined the relationship between meaningful work and IWB (Cai et al., 2018), meaningful work and employee engagement (Hoole & Bonnema, 2015), and IWB and employee engagement (Orth, & Volmer, 2017). In contrast, the purpose of this research was to determine the impact of meaningful work on employee engagement mediated through IWB. This study was the first to depict a mediated model where employee engagement influenced the relationship between meaningful work and IWB. The study's findings provided organizational leaders with insights into the relationship between meaningful work, IWB, and employee engagement, thereby increasing organizations' innovation.

Also, this research focused on the relationship between meaningful work and IWB (Cai et al., 2018), meaningful work and employee engagement (Hoole & Bonnema, 2015), and IWB and employee engagement (Orth & Volmer, 2017). This study utilized the expectancy theory to extend the body of knowledge by understanding the relationship between meaningful work and

IWB mediated through employee engagement. The knowledge on the relationship between meaningful work and IWB mediated through employee engagement can form a foundation for future research on the constructs that may impact IWB.

The research advanced the expectancy theory by providing new insights into the relationship between meaningful work and IWB mediated through employee engagement. Since the innovative process involve integrating both dimensions of the creative process to transform known or new ideas into viable products, new insights into the relationship between meaningful work and IWB mediated through employee engagement can facilitate this process. The advancement of the expectancy theory through this study enhanced the innovative process since, according to Schuh et al. (2018), the innovative process begins with employees recognizing a problem, coming up with new ideas or remedies, and adopting methods to operationalize the concepts.

Literature Review

The literature review of the constructs in the study to examine the impact of meaningful work on IWB mediated through employee engagement revealed that prior research determined the relationship between meaningful work and IWB (Cai et al., 2018), meaningful work, and employee engagement (Hoole & Bonnema, 2015), and IWB and employee engagement (Orth & Volmer, 2017).

The research literature on the topical innovation area indicates Schumpeter (as cited in Hansen & Wakonen 2009) created the initial definition of innovation emphasizing the aspect of novelty. Schumpeter (as cited in Crossan & Apaydin, 2009) suggested that innovation reflects new or novel outputs that include new goods or new goods or new methods of production or new markets. Schumpeter (as cited in Crossan & Apaydin, 2009) suggested the definition of

innovation as a new organizational structure, which refers to executing organizational tasks differently. However, this definition was challenged by Hansen and Wakonen (1997) by stating that it was impractical to perform tasks or produce goods or services identically, which made any change an innovation as per Schumpeter's definition. This definition was modified by Damanpour (1987), who contemplated a new idea as an innovation after its implementation and suggested the definition of innovation as the implementation of concepts related to processes, services, devices, systems, policies, or programs that are novel to the firm at the time of adoption.

The principle of the expectancy theory formed the basis of the quantitative correlational study. The expectancy theory principle relies on the fact that employees have several options and make choices primarily based on the choice they believe will lead to a quality private outcome (Lloyd & Mertens, 2018). Expectancy theory asserts that motivation is a blended function of the employee's perception that effort will lead to performance and the perceived desirability of outcomes resulting from the performance (Ramlall, 2004).

The literature on meaningful work assumed a unitary employee perception of meaningful work. It allocated little or no effort to finding why the employee perception of meaningful work may differ (Weeks & Schaffert, 2017). In line with Weeks and Schaffert (2017), meaningful work is regarded as that which is purposeful and significant. However, plenty of research done on this topic assumed that employees share a sense of meaningful work. The definitions provided little or no emphasis on how and why the meaning may differ from one employee to another (Rosso et al., 2010).

Employee engagement received substantial importance in the research literature and organizational leaders who wanted to retain employees and attract high-performing new

employees. Kahn (1990) described engaged individuals as those who employed and expressed themselves physically, cognitively, and emotionally at job-related task performances. On the other hand, disengaged employees withdrew and defended themselves physically, cognitively, and emotionally while performing work-related tasks. Employees who determined their jobs to be challenging and perceived a match between their values and that of the organization were more likely to find their jobs meaningful (Kordbacheh et al., 2014). Subsequently, those employees who perceived their jobs to be meaningful were likely to be more engaged.

The study by Ul Haq et al. (2017) describes IWB as receiving, producing, and enforcing new ideas, processes, products, or services. The study aimed to investigate the factors that enhance employees' innovative behavior and whether it remains the same when employees' organizational tenure increases. The study proposed that innovativeness among employees may enhance innovative behavior through four factors, which include (a) perceived failure tolerance, (b) communication openness, (c) work discretion, and (d) reward fairness. A sample of 381 employees from the telecommunication sector showed that all the antecedents had a positive effect on employee innovativeness.

Hsiao et al. (2011), described IWB as the individual's behavior to initiate and intentionally introduce new and beneficial ideas, processes, merchandise, or procedures within a work role or organization. As reported in Scott and Bruce (1994), IWB was described as an intentional generation, promotion, and realization of novel ideas in the workplace. This definition presented three essential functional elements of IWB: creation, promotion, and implementation of novel ideas that benefit organizations (Scott & Bruce, 1994). The idea in the generation stage included all those considerations to refining new products, organizational practices, and services (Akram et al., 2020). The idea promotion stage provided strengths to

those generated ideas and strived to remove organizational resistance and barriers to bring change. Finally, the idea realization stage helped bring the generated and promoted ideas into practical reality and resulted in the development of new products, services, and job procedures (Akram et al., 2020).

Methodology

The purpose of this quantitative correlational study was to examine the relationship between meaningful work and IWB mediated through employee engagement. Prior studies investigated the relationship between meaningful work and IWB (Cai et al., 2018), meaningful work and employee engagement (Hoole & Bonnema, 2015), and employee engagement and IWB (Orth & Volmer, 2017). However, this study was the first to depict a mediated model where employee engagement might influence the relationship between meaningful work and innovative work behavior.

The researcher investigated the following research question with the associated hypotheses:

- RQ1: What is the impact of meaningful work on IWB mediated through employee engagement of engineers with at least three years' experience working in engineering firms in the United States?
- H₀: There is no statistically significant correlation between meaningful work and IWB mediated through employee engagement.
- H_a: There is a statistically significant correlation between meaningful work and IWB mediated through employee engagement.

The survey questionnaire administered by SurveyMonkey contained the instruments for measuring meaningful work, employee engagement, and IWB. G* Power was utilized to determine the size of the sample population. In keeping with Faul et al. (2009), the G*Power 3.0.10 software includes various statistical tests to determine the sample size for correlational and regression analyses. The data collected was summarized and loaded into the SPSS software for analysis using the Pearson's Correlation Coefficient. As stated in Field (2013), Pearson correlation coefficient is a statistic for measuring the linear association's strengths between two continuous variables.

Findings

The study's findings to examine the impact of meaningful work on IWB mediated through employee engagement showed a statistically significant correlation between meaningful work and IWB mediated through employee engagement. As illustrated in Figures 9 and 10, the significance level was less than .05. Since $P < .05$, the null hypothesis (there is no statistically significant correlation between meaningful work and IWB mediated through employee engagement) was rejected. Therefore, there was a statistically significant correlation between meaningful work and IWB mediated through employee engagement.

Discussion of the Results

As mentioned earlier in Figure 13, the scatter plots and the subsequent best line of fit showed a strong positive correlation between meaningful work and employee engagement. Also, in Figure 14, the scatter plots, and the best fit line demonstrated a strong positive correlation between employee engagement and IWB.

As discussed earlier, Figure 1 showed the conceptual representation of the study's constructs to investigate the impact of meaningful work on IWB mediated through employee engagement. Prior studies have established a positive correlation between meaningful work and employee engagement (Hoole & Bonnema, 2015). Previous studies have also shown a positive correlation between employee engagement and IWB (Orth & Volmer, 2017). Further, previous research suggested that meaningful work positively impacted IWB (Cai et al., 2018). This study showed that meaningful work positively impacted employee engagement which subsequently impacted IWB.

The results of the study are important because the knowledge on the mediating role of employee engagement in the relationship between meaningful work and IWB can help researchers understand how organizational leaders can encourage innovative work behavior of employees. Also, the study will be advantageous to corporate leaders because it will provide new insights into the relationship between meaningful work, employee engagement, and IWB that can sustain or boost innovation in firms.

Although the quantitative correlation study established the relationship between meaningful work, employee engagement, and IWB, some limitations existed. First, the study investigated a small number of engineers, which raises concerns over the research findings' generalizability (Cai et al., 2018). Second, self-reporting responses rather than supervisor-rated employee IWB responses impacted objectively in reporting responses (Cai et al., 2018). Third, method bias may have influenced the results since participants were requested to respond to three constructs in the same survey simultaneously (Hoole & Bonnema, 2015).

Conclusions Based on the Results

This section continues to provide a review of the quantitative correlational study results. The section presents a comparison of the findings with the theoretical framework and previous literature. Also, the section provides an interpretation of the findings.

Comparison of the Findings

This section provides a comparison of the study findings with the theoretical framework and previous literature. The study's theoretical orientation to examine the relationship between meaningful work, employee engagement and IWB was based on the expectancy theory. Vroom (as cited by Lloyd & Mertens, 2018) defined expectancy as the individualized likelihood of action or effort leading to a consequence or performance. In this context, the study's theoretical orientation relies on the fact that people have choices, and they make selections based totally on which desire they believe will lead to the best personal outcome (Lloyd & Mertens, 2018). The study's findings indicated that providing engineers with meaningful work increased their engagement with a subsequent increase in IWB, which fell within the theoretical framework.

This study's theoretical orientation is based on the premise that employees have varied options while executing work-related tasks. They make decisions based on the choice they believe will lead to the best personal outcome. Similarly, the engineers who participated in the study have varied options while executing their work-related tasks. Those tasks that were meaningful generated an increase in engagement with a subsequent increase in IWB.

Expectancy theory proposes that motivation is dependent on the employees' expectations of their ability to perform job-related tasks and obtain required compensation (Yeheyis et al., 2016). The effort to performance expectancy refers to the employees' belief that exerting effort leads to a required performance level. For example, engineers that participated in the study tend

to perform more if they believe in and feel confident about their efforts. The performance of outcome expectancy is the conviction that the desired outcome will follow employees' performance (Yeheyis et al., 2016).

The conceptual framework discussed earlier in Figure 2 illustrated that the expectancy theory provides the foundation for achieving meaningful work through job autonomy, job complexity, and the effort-reward connection. The attainment of meaningful work impacts employee engagement (mediator), which in turn impacts IWB. The findings of the study established that meaningful work impacted employee engagement which subsequently impacted IWB.

Prior studies have established that meaningful work is positively impacted by the effort-reward connection (Kahn, 1990), job complexity (Sung et al., 2017), and job autonomy (Bowie, 1998). As illustrated in Figure 9 studies have established that meaningful work positively correlates with employee engagement (Hoole & Bonnema, 2015). Also, meaningful work positively impacts IWB (Cai et al., 2018), and employee engagement has a positive correlation with IWB (Orth & Volmer, 2017). This study examined the impact of meaningful work on IWB mediated through employee engagement. The findings indicated that meaningful work was positively correlated to employee engagement with a subsequent positive correlation to IWB.

Previous literature indicates that autonomy shown refers to how employees perceive discretion, freedom, and independence in scheduling job-related activities and describing work procedures (Galletta et al., 2016). In a highly autonomous job, employees perceive that their work efforts directly influence the work outcomes and therefore feel responsible for the outcome (Galletta et al., 2016). Similarly, engineers who participated in the study had autonomous jobs and perceived that their work efforts directly influence the work outcomes and therefore felt

responsible for the outcome. Also, job autonomy can enhance learning and growth, which has a positive impact on work performance. Job autonomy facilitates employee motivation (Galletta et al., 2016) and stimulates employees' sense of responsibility for accomplishing work outcomes (Hackman & Oldham, 1975). Job autonomy predicted meaningful work (Bowie, 1998) and the findings of the study established that meaningful work positively impacted employee engagement which positively impacted IWB.

As reported by Chae and Choi (2018), job complexity refers to the intrinsically motivating and challenging properties of a job, capable of capturing employees' attention for the successful execution of job-related tasks. As stated in Amabile and Conti (1999), complex jobs present significant decision-making latitude and opportunities to utilize advanced skills, thereby appealing to employees to proactively identify the challenges associated with the task and search for new possibilities and alternative courses of action. Sung et al. (2017) asserted that these intrinsically motivating tasks' performance enhances risk-taking characteristics and employees' experimental behaviors. Such tasks create adequate attention and motivation to experiment with unconventional methods when resolving given challenges. Job complexity was predicted meaningful work (Sung et al., 2017), and research findings established that meaningful work positively correlated to employee engagement with subsequent positive correlation to IWB.

Meaningful Work

Previous literature described meaningfulness at work as the experience that effort is justified and rewarded accordingly (Kahn, 1990). In this context, meaningful work is the employee perception that one is receiving a return on investments. The engineers who participated in the study were likely to display more effort when they believed that they would obtain valued compensation for their duties' successful execution. Therefore, these engineers

experienced meaningfulness in their work when they felt useful, worthwhile, and valuable. meaningful work is the employee perception that they make a difference as they execute their work-related duties, and their effort is not undervalued (Kahn, 1990).

The literature reviewed indicates that several factors make work meaningful or purposeful and significant. As reported by Rosso et al. (2010), work has a meaning that does not necessarily determine that it is meaningful. Meaningfulness refers to the amount of significance something holds for an individual. meaningful work consists of alignment between the employee and the work-related tasks. The extent to which work-related tasks match the employees` values and beliefs often determines the degree of meaningful work (Rosso et al., 2010). The engineers who participated in the study and what they brought to the worksite (for example, work orientations, work beliefs, values, or attributes of the work itself) determine meaningful work. Also, work autonomy and independence directly influence meaningful work because employees feel empowered and responsible (Bowie, 1998). The study validated that meaningful work positively impacted employee engagement with a subsequent positive impact in IWB.

Employee Engagement

The literature from previous research indicated that Morrison et al. (2007) argued that to enhance personnel engagement, managers should promote a sense of meaning and purpose in work itself because they are the impetus for continued productivity and high morale. In their study, Schaufeli et al. (2002) define employee engagement as a worthwhile and satisfying state of mind related to work activities symbolized by absorption, vigor, and dedication. As stated in Pech and Slade (2006), employee engagement refers to the underlying strength organizations can utilize to bolster their success and personalized advantages. The study's findings indicated that employee engagement was positively correlated to IWB.

Innovative Work Behavior

Sameer (2018) asserted that IWB refers to the employees' actions to generate, introduce, and apply beneficial novelty at all organization levels (Kleysen & Street, 2001; Sameer, 2018). It comprises several practices and behaviors that included idea generation, opportunity discovery, investigation, championing, and application (Kleysen & Street, 2001; West & Farr, 1989). The scope of IWB includes developing new product ideas and new technologies. It also spans wide to include changes in administrative procedures that aim to improve work relations, initiate new ideas, and apply new ideas or technologies to work processes to improve the effectiveness of work (Kleysen & Street). The job responsibilities of engineers who participated in the study included (a) developing new product ideas and new technologies, (b) improving work relations, (c) initiating new ideas, and (d) applying new ideas or technologies to work processes aimed at improving the effectiveness of the firm. The study established that these activities made the engineers' work meaningful, positively impacting employee engagement with a subsequent positive impact on IWB.

Interpretation of the Findings

The research from previous literature established a positive correlation between meaningful work and employee engagement (Hoole & Bonnema, 2015), a positive correlation between employee engagement and IWB (Orth & Volmer, 2017), and a positive influence on meaningful work, which positively impacted IWB (Cai et al., 2018). The previous studies involving a pair drawn from the three constructs (meaningful work, employee engagement, and IWB) resulted in a positive correlation relationship. Also, work autonomy, work complexity, and effort-reward positively impacted meaningful work. Therefore, it could be deduced that meaningful work positively employee engagement which positively impacts IWB. The study

verified that there was a positive correlation between meaningful work and employee engagement with subsequent correlation to IWB.

Limitations

This research investigated a small number of engineers working in engineering firms in the United States. The participants' selection was made through convenience sampling since the researcher conveniently selected individuals invited to participate. The convenience sampling raises several limitations. First, the convenience sampling data does not reflect how the entire population of engineers or employees in other fields would feel about meaningful work, employee engagement, or IWB. Therefore, the survey data is only useful for the small group of engineers, and the data cannot offer any information on other groups of employees. Second, since the sample population's data does not reflect how the entire population feels about meaningful work, employee engagement, and IWB, the study findings' generalizability is not feasible.

The other limitation relates to self-reporting responses rather than supervisor-rated employee IWB responses, which are important in objectively reporting responses (Cai et al., 2018). The main limitations with the self-reported responses include participants providing socially acceptable responses rather than being truthful, participants may not assess themselves accurately, and the participants can interpret the questions differently.

Also, method bias may have influenced the study's results to examine the impact of meaningful work on IWB mediated through employee engagement. In this study, the researcher was responsible for setting up the research criteria and the inclusion/exclusion conditions, thereby influencing the results. Further, the researcher can set criteria to include or exclude a specific population (participant bias), impacting the study's findings.

Implications for Practice

The study to examine the impact of meaningful work on IWB mediated through employee engagement had several implications. First, the mediating role of employee engagement in the relationship between meaningful work and IWB can help researchers understand how organizational leaders can encourage innovative work behavior of engineers working in engineering firms in the United States. Second, the study will be advantageous to corporate leaders because it will provide new insights into the relationship between meaningful work, employee engagement, and IWB that can sustain or boost innovation in firms. Third, by identifying what meaningful work represents, this research will be proposing that organizational leaders ought to be involved in influencing employees' perceptions of meaningful work to expedite IWB. Fourth, the study will help organizational leaders understand the basic factors that may influence and encourage the IWB of its employees.

Recommendations for Further Research

The findings of the quantitative correlational study led to recommendations for future study. This research investigated a small number of engineers working in engineering firms in the United States. It is recommended that further research should utilize a large number of participants, preferably drawn from a cross-section of professions. The larger sample from a cross-section of professions can make the generalizability of data possible.

In the study, participants' selection was made through convenience sampling since the researcher conveniently selected individuals invited to participate. It is recommended that further research should be done using other methods for the selection of the participants. Using other sampling methods will increase the possibility of the data reflecting how the entire population of employees would feel about meaningful work, employee engagement, or IWB. The use of other

sampling methods will ensure the sample population's data reflect how the entire population feels about meaningful work, employee engagement, and IWB. The generalizability of the study findings will be feasible.

It is also recommended that further research be conducted using supervisor-rated employee IWB responses, which are essential in objectively reporting responses. The data inaccuracies associated with the self-reported responses can be avoided. The supervisor-rated responses will eliminate the possible confusion related to participants reading and interpreting survey questions differently. Further, the study utilized the expectancy theory to extend the body of knowledge by understanding the relationship between meaningful work and IWB mediated through employee engagement. The knowledge on the relationship between meaningful work and IWB mediated through employee engagement can form a foundation for future research on the constructs that may impact IWB.

Conclusion

The quantitative correlational study's findings indicated a statistically significant correlation between meaningful work and IWB mediated through employee engagement. The hypotheses sought to examine the statistically significant correlation between meaningful work and IWB mediated through employee engagement. The study questions were aimed to respond to the relationship between meaningful work and employee engagement and subsequent relationship with IWB. The null hypothesis was rejected, and the alternate hypothesis was accepted.

The study's findings provide organizational leaders with insights into the relationship between meaningful work, IWB, and employee engagement, thereby increasing organizations' innovation. Similarly, the research advanced the expectancy theory by providing new insights

into the relationship between meaningful work and IWB mediated through employee engagement. Since the innovative process involve integrating both dimensions of the creative process to transform known or new ideas into viable products, new insights into the relationship between meaningful work and IWB mediated through employee engagement can facilitate this process. The advancement of the expectancy theory through this study enhanced the innovative process.

Further, the mediating role of employee engagement in the relationship between meaningful work and IWB can help researchers understand how organizational leaders can encourage innovative work behavior of employees. The study is advantageous to corporate leaders because it provides new insights into the relationship between meaningful work, employee engagement, and IWB that can sustain or boost innovation in firms. By identifying what meaningful work represents, this research proposed that organizational leaders should be involved in influencing employees' perceptions of meaningful work to expedite IWB.

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