

2018

Relationships Between Project Cost, Project Team Member Role, Project Schedule, and Burnout

Alan Lee Bundschuh
Walden University

Follow this and additional works at: <https://scholarworks.waldenu.edu/dissertations>

 Part of the [Business Commons](#)

This Dissertation is brought to you for free and open access by the Walden Dissertations and Doctoral Studies Collection at ScholarWorks. It has been accepted for inclusion in Walden Dissertations and Doctoral Studies by an authorized administrator of ScholarWorks. For more information, please contact ScholarWorks@waldenu.edu.

Walden University

College of Management and Technology

This is to certify that the doctoral study by

Alan Bundschuh

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee

Dr. Brandon Simmons, Committee Chairperson, Doctor of Business Administration Faculty

Dr. Edgar Jordan, Committee Member, Doctor of Business Administration Faculty

Dr. Peter Anthony, University Reviewer, Doctor of Business Administration Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2018

Abstract

Relationships Between Project Cost, Project Team Member Role, Project Schedule, and Burnout

by

Alan L. Bundschuh Jr.

MBA, Wilmington University, 2005

BS, Southern Illinois University, 2003

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

June 2018

Abstract

Employees affected by burnout syndrome often experience reduced engagement and decreased job performance, costing their organizations through lost productivity and profit. However, it is not clear what causes employee burnout in working environments. The purpose of this correlation study was to examine the relationships between project cost, project team member role, project schedule, and project team member burnout. This study was grounded in the job demands-resources theory, which states that all employees experience demands in their work that may lead to long-term stress and eventually burnout syndrome if these demands are not mitigated by job resources. The population for this study consisted of project management team members located in the Southern United States. The research question for this study examined the relationships among project cost, project team member role, project schedule, and burnout of project team members. A survey provided the data for analysis (N = 159). Study data were evaluated using correlational analysis. Multiple linear regression results indicated no significant relationships existed between project cost, project team member role, project schedule, and the 3 constructs of burnout syndrome: cynicism, exhaustion, and professional efficacy. This study may contribute to social change by increasing awareness of what contributes to employee burnout. This research is relevant to project management team members and business leaders. Burnout leads to reduced employee engagement, lost profit for the business, and health impairment for burned out employees. Project teams and business leaders would benefit by incorporating information from this study in programs designed to reduce, mitigate, or eliminate burnout among project management personnel.

Relationships Between Project Cost, Project Team Member Role, Project Schedule, and Burnout

by

Alan L. Bundschuh Jr.

MBA, Wilmington University, 2005

BS, Southern Illinois University, 2003

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

June 2018

Dedication

I dedicate this study to my family, whose support and encouragement are my enabling force. Brenda, my beautiful wife, without your little nudge all those years ago I would not have started this journey. Your support and encouragement provided what I needed each step of the way from that first class onward. Thank you for always believing in me. To my children Alan, Holly, Paige, Erica, and Ryan, words cannot express how grateful I am for your love and support. You endured the journey with me; through long hours of expected quiet and the many missed occasions. You never complained. Thank you!

Acknowledgments

I wish to thank my committee members for their encouragement and valuable support. Dr. Brandon Simmons, my chair, thank you for all of your help and suggestions. I may not have reached this point without your guidance and support. Dr. Edgar Jordan, my second committee member, thank you for your clarification and guidance. You helped paint the picture of the value this study provides. I also wish to acknowledge K. Scott McNary and Eric Craft, whose support opened the door to continuing my educational journey!

Table of Contents

List of Tables	v
List of Figures	vi
Section 1: Foundation of the Study.....	1
Background of the Problem	1
Problem Statement	2
Purpose Statement.....	2
Nature of the Study	3
Research Question	4
Hypotheses	4
Theoretical Framework.....	4
Operational Definitions.....	5
Assumptions, Limitations, and Delimitations.....	7
Assumptions.....	7
Limitations	8
Delimitations.....	8
Significance of the Study	9
Contribution to Business Practice.....	9
Implications for Social Change.....	9
A Review of the Professional and Academic Literature.....	10
Job Demands-Resources (JD-R) Model.....	11
Job Demands.....	13

Job Resources.....	14
Employee Burnout	15
Employee Engagement	16
Employee Motivation.....	18
Leadership.....	20
Rival Theories and Models	21
Job Demand-Control (JDC) and Job Demand-Control-Support (JDCS)	
Models.....	21
Self-Determination Theory	22
Predictor and Dependent Variables	23
Project Cost.....	24
Project Team Member Role	25
Project Schedule.....	26
Burnout	27
Maslach Burnout Inventory	28
Burnout Constructs	31
Other Methodologies and Models.....	33
Transition	36
Section 2: The Project.....	37
Purpose Statement.....	37
Role of the Researcher	37
Participants.....	39

Research Method and Design	40
Research Method	41
Research Design.....	42
Population and Sampling	43
Ethical Research.....	45
Instrumentation	47
Data Collection Technique	49
Data Analysis	50
Study Validity	53
Internal and External Validity.....	53
Statistical Conclusion Validity	54
Transition and Summary.....	55
Section 3: Application to Professional Practice and Implications for Change	57
Introduction.....	57
Presentation of Findings	58
Pre-Analysis Data Screen	59
Descriptive Statistics.....	59
Demographic Frequencies and Percentages.....	59
Independent Variable Frequencies and Percentages.....	61
Reliability.....	62
Summary Statistics for Interval Variables	63
Pearson Correlations Between Variables of Interest	64

Inferential Analyses	66
Regression Predicting Cynicism.....	66
Regression Predicting Exhaustion	69
Regression Predicting Professional Efficacy	72
Applications to Professional Practice	75
Implications for Social Change.....	76
Recommendations for Action	76
Recommendations for Further Research.....	77
Reflections	78
Conclusion	79
References.....	81
Appendix A: Reference Statistics.....	103
Appendix B: National Institute of Health Certification.....	104
Appendix C: Survey Questions.....	105
Appendix D: Permission to Use the MBI-GS.....	107

List of Tables

Table 1. Frequency Table for Demographics	60
Table 2. Frequency Table for Independent Variables.....	62
Table 3. Reliability Table for Cynicism, Exhaustion, and Professional Efficacy	63
Table 4. Summary Statistics Table for Interval and Ratio Variables	63
Table 5. Pearson Correlations for Cynicism Subscale and Variables of Interest	65
Table 6. Pearson Correlations for Exhaustion Subscale and Variables of Interest.....	65
Table 7. Pearson Correlations for Professional Efficacy Subscale and Variables of Interest.....	66
Table 8. Results for Linear Regression Predicting Cynicism	69
Table 9. Results for Linear Regression Predicting Exhaustion	72
Table 10. Results for Linear Regression Predicting Professional Efficacy	75
Table A1. Reference Statistics.....	103

List of Figures

Figure 1. Graphical model of project burnout predictors	5
Figure 2. Power as a function of sample size.....	46
Figure 3. Q-Q scatterplot testing normality of cynicism	67
Figure 4. Residuals scatterplot testing homoscedasticity of cynicism.....	68
Figure 5. Q-Q scatterplot testing normality of exhaustion	70
Figure 6. Residuals scatterplot testing homoscedasticity of exhaustion.....	71
Figure 7. Q-Q scatterplot testing normality of professional efficacy	73
Figure 8. Residuals scatterplot testing homoscedasticity of professional efficacy.....	74

Section 1: Foundation of the Study

Studies on the effects of job demands, job resources, and workforce burnout are extensive, covering a multitude of industries across the globe (Bakker & Costa, 2014). Employees affected by burnout syndrome often experience decreased job performance (Luo et al., 2016; Upadyaya, Vartiainen, & Salmela-Aro, 2016) which may lead to a loss of productivity (Bakker & Costa, 2014) and profitability for their organizations (Roelen et al., 2015). Project management personnel often experience workplace stressors that can lead to burnout syndrome because of their high-demand and low-resource work environments (Pinto, Dawood, & Pinto, 2014). Project cost, project team member role, and project schedule are three prominent workplace stressors that project management team members endure (Pinto, Patanakul, & Pinto, 2016). The purpose of this quantitative correlational study was to examine the relationship between project cost, project team member role, project schedule, and project team member burnout.

Background of the Problem

A project is a unique, transient endeavor, undertaken to achieve planned objectives regarding outputs, outcomes, or benefits (Wysocki, 2014). Project teams are subjected to high job demands and low job resources inducing stress that may lead to burnout of the project team members (Bowen, Edwards, Lingard, & Cattell, 2014; Enshassi, El-Rayyes, & Alkilani, 2015; Pinto et al., 2014). For this study, project teams were comprised of (a) project managers, (b) project superintendents, (c) project engineers, (d) project administrators, (d) project consultants, and (e) all others (see Pinto et al., 2014). Bakker and Demerouti (2007) claimed that job demands not sufficiently

mitigated by job resources lead to a decrease in job satisfaction and an increase in job stress. Project managers who are satisfied with their jobs experience decreased stress and higher satisfaction. (An, Zhang, & Lee, 2013).

Problem Statement

Project management work suffers budget constraints, role conflict, demanding schedules, high demands, and low resources, which may lead to project team member burnout (Pinto et al., 2016). In a study of burnout among construction project team members in the Midwestern United States, Motil (2015) found that nearly 40% of the survey respondents experienced burnout. The general business problem is that burnout among project management team members negatively affects performance, progress, and successful completion of projects. The specific business problem is that some business owners, managers, and project leaders do not understand the relationship between project cost, project team member role, project schedule, and project team member burnout.

Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship between project cost, project team member role, project schedule, and project team member burnout. The targeted population consisted of project management team members located in the Southern United States, including Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia. The independent variables were (a) project cost, (b) project team member role, and (c) project schedule. The dependent variable was project team member burnout. The

implication for social change includes the potential to provide project and business leaders with information about burnout predictors they can consider when assigning project teams or when designing programs to reduce the effects of burnout and improve professional efficacy, morale, and organizational profitability (see Chen & Yu, 2014).

Nature of the Study

Some researchers use the quantitative methodology, as I did for this study, to test a theory by examining the relationship between independent and dependent variables using inferential statistics (Turner, Balmer, & Coverdale, 2013). Therefore, the quantitative method was appropriate for this study because I was testing a theory to identify if a relationship exists between the proposed causes and burnout. Conversely, some researchers use a qualitative methodology to focus on exploring the subjective *how* or *why* type research questions (Bailey, 2014), and the human lived experiences (Hyett, Kenny, & Dickson-Swift, 2014). The qualitative research methodology was not appropriate because the aim of this research was not exploring the subjective meanings of a phenomenon. Finally, researchers who want to gain the benefits of both research methodologies combine the quantitative and qualitative methods (Venkatesh, Brown, & Bala, 2013). This mixed methods approach was not appropriate for this study, which included no qualitative elements.

Design types available for quantitative studies include correlational, experimental, and quasi-experimental. Researchers employing an experimental or quasi-experimental design manipulate their variables or subjects and measure the results of their influence to understand cause and effect relationships (Venkatesh et al., 2013). This study was not

intended to reveal cause and effect relationships, and manipulation was not included, eliminating experimental designs from consideration. Correlational studies include numerical data, statistical analysis, and deductive reasoning (Mir & Pinnington, 2014). The correlational design was the most appropriate research design for this study of the relationship between project cost, project role, project schedule, and project team member burnout.

Research Question

What is the relationship between (a) project cost, (b) project team member role, (c) project schedule, and (d) project team member burnout?

Hypotheses

Null Hypothesis (H_0): There is no relationship between (a) project cost, (b) project team member role, (c) project schedule, and (d) project team member burnout.

Alternative Hypothesis (H_A): There is a relationship between (a) project cost, (b) project team member role, (c) project schedule, and (d) project team member burnout.

Theoretical Framework

Bakker and Demerouti (2007) developed the Job Demands-Resources (JD-R) model of burnout in 2001. Bakker and Demerouti proposed *job demands* and *job resources* as two dimensions of working conditions found in all organizations. Examples of job demands include high work pressure, hostile physical environment, and emotionally demanding interactions (Bakker & Demerouti, 2007). Examples of job resources, which help deal with job demands and motivate employees, are autonomy, coworker support, and feedback (Wang, Huang, & You, 2016). As applied to this study,

job demands included the project cost, project team member role and project schedule independent variables. Therefore, because Bakker and Demerouti proposed that job demands and resources were dimensions of working conditions, I expected the linear combination of predictor variables (a) project cost, (b) project team member role, and (c) project schedule to predict project team member burnout significantly. Figure 1 is a graphical representation of the linear relationship between job demands, job resources, and burnout.

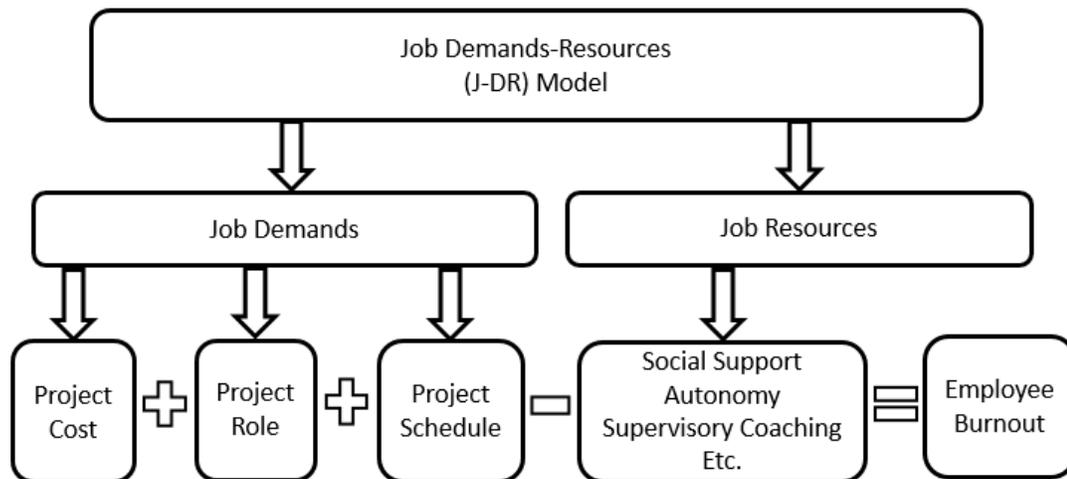


Figure 1. Graphical model of project burnout predictors.

Operational Definitions

The purpose of this section is to identify and define terms used in the study that not all readers will understand, or that may have different meanings under differing contexts. Many ordinary dictionaries do not list the definitions provided in this section. Scholarly resources used when researching and preparing for this study provided the terms and definitions in this section.

Burnout: A three-dimensional psychological response that exists when a person experiences a combination of emotional exhaustion, cynicism, and diminished personal accomplishment (Ahola, Hakanen, Perhoniemi, & Mutanen, 2014; Beheshtifar & Omidvar, 2013; Bria, Spânu, Băban, & Dumitrașcu, 2014; Maslach & Jackson, 1981). In a simple definition, burnout syndrome is a physical and psychological response to stress manifested as a combination of emotional exhaustion, cynicism, and reduced personal accomplishment (Bakker & Costa, 2014). Herbert J. Freudenberger (1974) coined the term burnout while conducting studies of severe stress.

Cynicism: Also described as depersonalization or dehumanization. A condition that causes one to develop a cynical attitude toward others, their work, and their organization (Simha, Elloy, & Huang, 2014).

Emotional exhaustion: Being overextended or experiencing the depletion of one's emotional resources (Bakker & Costa, 2014; Maslach & Jackson, 1981).

Job control: Also known as decision latitude. The control or influence a worker has over their tasks and conduct (Ibrahim & Ohtsuka, 2014; Pinto et al., 2014).

Job demands: Social, psychological, physical and organizational stressors a worker experiences (Ibrahim & Ohtsuka, 2014).

Job support: Also known as social support. The support a person receives from supervisors, colleagues, and coworkers (Pinto et al., 2014).

Professional efficacy: A level of individual performance, accomplishment, or competency in one's specific profession (Bria et al., 2014).

Project: A unique series of interconnected activities with a common goal, schedule, and cost (Wysocki, 2014).

Project management: An organized, systemic approach to meet a business need and provide incremental value (Wysocki, 2014).

Southern United States: A group of states including Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia (U.S. Census Bureau, 2016).

Assumptions, Limitations, and Delimitations

Providing assumptions, limitations, and delimitations help the researcher and study audience understand the study implications. In the following paragraphs, I explain the assumptions, limitations, and delimitations considered for this study.

Assumptions

Researchers embrace assumptions when they take for granted or accept a fact or statement as true without proof. Researchers strive to solve what they believe are real-life issues or problems leading to the natural inclusion of their assumptions (Cunningham, 2014). Assumptions inherently carry risk and should be treated as such.

My first assumption was that an appropriate population would respond to the SurveyMonkey (<https://www.surveymonkey.com>) instrument enabling generalization of the findings to represent the broader population of the Southern United States project management community. Second, I assumed the separation between the researcher and study participants provided by the online forum would allow respondents to provide

truthful and accurate responses. Finally, I assumed the theoretical framework of Maslach's Burnout Inventory-General Survey was adequate to gauge the level of burnout among the Southern United States project management population.

Limitations

A limitation occurs when an external source confines or controls a study element (Kahlke, 2014). A limiting factor to this study was the instrument used to gather survey responses, SurveyMonkey Audience (<https://www.surveymonkey.com/Audience>). A size limit (Marshall, Cardon, Poddar, & Fontenot, 2013) existed in the paid service participant pool for the geographical area selected in this study impeding my ability to produce a valid statistical analysis. Because of the SurveyMonkey Audience participant limitation, I invited additional survey respondents to participate via social media platforms. Due to anonymity, the survey respondents may not have provided accurate answers causing the data results to differ from reality.

Delimitations

Delimitations are study limits and boundaries set by the researcher (Kahlke, 2014). The study objective was to test for a potential correlation between project cost, project team member role, project schedule, and project team member burnout. A boundary set for this research was the geographical region of the Southern United States. Additional boundaries the survey instrument controlled included limiting respondents to project team members over the age of 18 with experience in the project management disciplines.

Significance of the Study

Contribution to Business Practice

This study has the potential to make a positive impact on business as it represents the possibility of understanding the relationship between project cost, project team member role, project schedule, and burnout of project management team members, which may help the business reduce loss and increase profit. By understanding relationships between the project management environment and burnout among project management team members, business owners can implement programs and solutions aimed at preventing or mitigating burnout and its effect on the business (Charoensukmongkol, Moqbel, & Gutierrez-Wirsching, 2016). The development of new work practices to drive standardization on methods aimed at reducing burnout of project management teams while increasing their success and profit for their business is a possible outcome of this study.

Implications for Social Change

Enabling project teams to increase success rates has the potential to drive enormous social change. Business leaders who can identify and reduce factors contributing to burnout may positively affect the well-being, social interaction, and personal health of project management team members (Agyemang, Nyanyofio, & Gyamfi, 2014; Chiu, Stewart, Woo, Yatham, & Lam, 2015; Pinto et al., 2016). Project managers and business leaders may improve project team results as they work to reduce burnout syndrome, increasing the potential to reduce loss and increase profits for the organization. Profitable organizations are more likely to grow, resulting in increased

employment opportunity and higher cash flows in their communities from a successful business.

A Review of the Professional and Academic Literature

This literature review is a critical analysis and synthesis of current literature related to the study theory and variables. Topic areas included in this literature review were (a) the theoretical framework and conceptual model, (b) rival theories or opponents of the theoretical framework, (c) the measurement instrument used in the study, (d) the independent or predictor variables, (e) the dependent variable, and (e) methodologies used by other researchers in past studies of burnout. Included in the study sources were (a) databases made available via Walden and other university libraries, (b) sources available through Google Scholar's search and alert tool, (c) doctoral studies, theses, and dissertations available via the ProQuest and UMI databases, and (d) peer-reviewed journals and reports available from Walden University's online library, other institutional libraries, and the journal homepages via the Internet, and (e) seminal books.

Represented in this study are a total of 153 sources, including 72 sources within the literature review. Peer-reviewed sources accounted for 144, or 94%, of all sources contained in the overall study and represented 69, or 95%, of the sources in the literature review. Walden University doctoral studies must include a minimum of 85% of the sources used to be current. A source must be published less than 5 years of the final study approval date to be considered current. The research conducted for this study included 88% current sources in total and 86% current sources in the literature review. Appendix A provides portions and ratios of the literature age and peer-reviewed status.

The purpose of this quantitative correlational study was to examine the relationship between project cost, project team member role, project schedule, and project team member burnout. The targeted population consisted of project management team members located in the Southern United States. The independent variables were (a) project cost, (b) project team member role, and (c) project schedule. The dependent variable was a three-dimensional measurement of project team member burnout.

Job Demands-Resources (JD-R) Model

I chose the JD-R model, introduced in 2001 by Bakker and Demerouti (2007), as the framework for this study. The researchers published the model to help understand the causes of burnout as described by Maslach and Jackson (Schaufeli & Taris, 2014). The JD-R model is one of the predominant job stress models available today (Schaufeli, 2015). The JD-R model spans across virtually any organization type because the model includes any demand or resource present in the work setting (Schaufeli & Taris, 2014). The JD-R model is easily customized to fit an application (Schaufeli & Taris, 2014). Work settings with excessive demands or insufficient resources cause the workplace stress that leads to reduced engagement and increased burnout (Wang et al., 2016).

Bakker and Demerouti (2007) proposed that job demands and job resources are two dimensions of working conditions found in all organizations. Demerouti and Bakker (2011) contend that every job characteristic is classifiable as either a job demand or a job resource that can affect the well-being and performance of employees. Job demands are emotional and physical stressors that manifest in many forms including role, personal, and employee conflict (Saari, Melin, Balabanova, & Efendiev, 2017). Other sources of

job demands are time pressure, workplace bullying, and work-family conflict (McGregor, Magee, Caputi, & Iverson, 2016). Job demands affect employee well-being through physical, social, and organizational aspects (Wingerden, Bakker, & Derks, 2016). Conversely, job resources are organizational, physical, and social positive job aspects (Hu, Schaufeli, & Taris, 2016; Maden-Eyiusta, 2016). Job resources enable employees to achieve their role objectives by reducing the psychological impact experienced through job demands (Sarti, 2014). Job resources manifest in many forms including employee autonomy, variety of work, social support, and coaching, which includes supervisor and coworker feedback (Maden-Eyiusta, 2016). The JD-R theory is an all-inclusive, farther reaching adaptation of past research on stress and motivation or engagement (Bakker & Demerouti, 2007).

According to the JD-R model, two prominent psychological processes affect the job strain and motivation of employees: motivational pathways and health impairment (Bakker & Demerouti, 2007; McGregor et al., 2016). High job demands, including work overload, work pressures, role ambiguity, and emotional demands, deplete employee energy levels, which leads to health impairment issues, stress, and burnout (Bakker & Demerouti, 2007; Demerouti & Bakker, 2011;). Alternatively, job resources prevent health impairment by developing extrinsic employee motivation, increased work engagement, and reduced cynicism (Bakker & Demerouti, 2007; Demerouti & Bakker, 2011; Rattie & Kittler, 2014). Rattie and Kittler (2014) identified job resources as antecedents of motivational related outcomes in the form of employee commitment and

dedication. The following paragraphs provide an overview of job demands and job resources.

Job Demands

Job demands are workplace stressors that, when not mitigated via job resources or other means, can cause the occupational hazard burnout (Maslach & Leiter, 2016; Wang et al., 2016) among project management team members. Some examples of job demands are high work pressure, high workload and unfavorable physical environment (Rattrie & Kittler, 2014; Wang et al., 2016), role ambiguity, role conflict (Rattrie & Kittler, 2014; Van Yperen, Wörtler, & De Jonge, 2016), role overload (Trépanier, Fernet, & Austin, 2013), and emotionally demanding interactions (Bakker & Demerouti, 2007; Rattrie & Kittler, 2014). As applied to this study, job demands included the stressors that accompany the predictor variables project cost, project team member role, and project schedule.

Job demands left unmoderated may cause harm to the psychological health of employees. In a study of 350 workers, Trépanier, Fernet, and Austin (2013) determined that three job demands related to personnel role positively correlated to psychological distress. Role overload ($r = .35, p < .01$), role ambiguity ($r = .29, p < .01$), and role conflict ($r = .35, p < .01$) all showed a positive relationship with employee psychological distress (Trépanier et al., 2013). The study conducted by Trépanier et al. (2013) also showed that autonomous motivation has a negative relationship to the psychological distress experienced by employees ($r = -.24, p < .01$). Thus, although the role an

employee fills may introduce distress, employers have options to reduce the distress through means of motivation.

A typical result of the job demands that accompany the predictor variables in this study is burnout of project team members (Beheshtifar & Omidvar, 2013), which was the dependent variable in this study. Therefore, since Bakker and Demerouti (2007) proposed job demands and resources are two dimensions of working conditions, I expected the linear combination of predictor variables (a) project cost, (b) project team member role, and (c) project schedule to predict the dependent variable project team member burnout significantly.

Job Resources

Job resources promote motivational processes for employees which combat the effects of job demands and increase the possibility of employee well-being (Bakker & Demerouti, 2007) and employee engagement and performance (Demerouti & Bakker, 2014; Sarti, 2014; Wingerden et al., 2016). Examples of the job resources that mitigate job demands and motivate employees are autonomy and feedback (Wang et al., 2016), social support (Kundu & Lata, 2017), coaching from coworkers and managers (Teoh, Coyne, Devonish, Leather, & Zarola, 2016; Wingerden et al., 2016), learning opportunities (Kundu & Gahlawat, 2016; Lancaster & Di Milia, 2015; Saari et al., 2017; Sarti, 2014), and job control (Schaufeli, 2015). In a three-wave longitudinal study of 263 workers, Wang, Huang, and You (2016) found that resources from an employee's job and personal life tend to reduce the level of burnout they experience. Wang et al. (2016) further found not only that personal resources had a direct mitigating effect on employee

burnout but also that these resources acted as a mediator between job resources and employee burnout.

Job demands left unmitigated by job resources have a destructive effect on work engagement. Learning new skills is a requirement in the complex marketplace of today's business landscape (Sarti, 2014). Saari et al. (2017) conducted a study of job demands and resources to understand their effects on employee work engagement. The researchers proposed that jobs demands and resources are predictors of employee engagement. The most influential predictor of employee work engagement to emerge from the study was employee skill development (Saari et al., 2017). Sarti's (2014) earlier 167-participant study of job resources and employee engagement also revealed a significant relationship between learning opportunities and employee work engagement ($r = 0.39, p < .001$). In a study of 263 employees, Wang (2016) noted that job demands positively affected burnout, whereas job and personal resources had a negating or lessening effect.

Employee Burnout

Freudenberger (1974) described in a paper on staff burnout that the dedicated and committed employees are the most likely to experience burnout. Freudenberger's burnout results should be of considerable concern to business leaders who are responsible for employee output and also to leaders who rely on the output of company employees. Just as indicated in the early days of burnout research, the dedicated employees are often those who put in the long hours, give their best effort, share their talent, and work with intensity (Freudenberger, 1974). Freudenberger explains that job stressors affect dedicated and committed employees in a three-pronged attack those employees feel as

internal and external personal pressures to give along with external pressures from leadership to deliver more.

Employee Engagement

Improving employee engagement is a strategic focus area for businesses looking to increase workforce productivity. Engaged employees are dedicated (Freudenberger, 1974), approach their work with a positive mindset (Rana, Ardichvili, & Tkachenko, 2014), immerse themselves in their work (Schaufeli & Taris, 2014), and invest themselves in organizational processes (Kundu & Lata, 2017). Unlike burnout, engagement has a positive correlation with employee self-efficacy (Consiglio, Borgogni, DiTecco, & Schaufeli, 2016). Engagement then is an antithesis to the burnout measure of reduced professional efficacy (Bakker, Demerouti, & Sanz-Vergel, 2014). The following paragraphs will provide a closer look at engagement and its effect on business.

Engagement is a measurement and description of employees' approach to their work. Researchers (Karanika-Murray, Duncan, Pontes, & Griffiths, 2015) describe employee engagement as a multidimensional construct including vigor, dedication, and absorption. Though a relatively new concept at the turn of the century, increased research and organizational effort to improve performance have given focus to the term engagement in the academic and organizational literature (Rana et al., 2014). Although engagement is a frequent topic of study, the definition of the concept still varies widely between the academic and organizational contexts. Academic definitions of engagement include employee needs satisfaction, employee job satisfaction, and role-specific engagement which are all in opposition to the definition of employee burnout (Guest,

2014). Business definitions of engagement include job contentment, expanded employee effort, and organizational dedication. The lack of consensus for defining engagement may be a result of the broad range of antecedents attributed to the concept, but one common factor is that employee engagement is a focus area of human resource development practitioners (Rana et al., 2014).

A challenge for business leaders today is to increase workforce performance thereby increasing profit. One method to achieve this goal is to increase workforce engagement (Karanika-Murray et al., 2015). A search of Google Scholar for the words engagement model returns over 3 million suggested readings. One such reading is a model developed by Rana et al. (2014) which provides business leaders with a tool to understand input measures that lead to engaged employees. The model (Rana et al., 2014) provides a very high view of the inputs or antecedents which include challenging work and development opportunities. The output of the model created by Rana et al. shows that engaged employees yielded increased performance and decreased turnover (Kundu & Lata, 2017). Job demands and individual characteristics are the noted moderators in the model proposed by Rana et al. Rana et al.'s model is one of many tools that can assist business leaders in combating the problem of employee burnout.

Engaged employees have a brighter perspective than that of their counterparts which suffer from burnout. A connection to their work sets engaged employees apart from their burned out counterparts (Bakker et al., 2014). Employees suffering burnout tend to focus on the demands of their work and feel stressed whereas engaged employees see their work as challenging (Bakker et al., 2014; Karanika-Murray et al., 2015).

Upadyaya (2016) contends that employee engagement spills over to enhance life satisfaction and vice versa affecting employee well-being. Life satisfaction, especially among young adults, is a predictor of future career engagement (Upadyaya & Salmela-Aro, 2015). Understanding the reciprocal arrangement between engagement and life satisfaction can help employers in choosing candidates to hire and motivate them to combat burnout in their organizations.

Employee engagement is a two-directional benefit to and from the organization. One method to foster employee engagement is to provide them with a supportive work environment (SWE) (Kundu & Lata, 2017). An SWE business provides employees with resources as described by the JD-R theory including peer and supervisor support (Ma Prieto & Pilar Pérez-Santana, 2014). These SWE organizations thereby combat employee burnout and foster employee engagement (Kundu & Lata, 2017). The engaged employees then contribute to the total organizational engagement via their commitment and organizational citizenship behavior (Nutov & Hazzan, 2014).

Employee Motivation

Organizations that offer employees high demands and low resources may experience a decrease in employee motivation and the negative aspects that accompany it (Van Yperen et al., 2016). Unlike engaged employees, workers experiencing burnout are less energetic, feel a loss of connection to their work activities and feel less competent or capable of accomplishing their daily work tasks (Rana et al., 2014). The JD-R model considers these less than optimal feelings experienced by burned out employees to be a health impairment (Wang et al., 2016). In their study of job demands, job resources,

personal resources, and burnout among 263 employees, Wang et al. (2016) found that employee personal resources (self-efficacy, self-esteem, and optimism) did not have a mediating effect on job demands and burnout, but that they did have a mediating effect between job resources and burnout. The results show that for a given demand, increasing or mediating these personal resources has a positive effect on employee burnout (Wang et al., 2016). Similarly, studies conducted by Trépanier (2013) and Van Yperen et al. (2016) noted that job demands alone are not the problem. The researchers (Trépanier et al., 2013; Van Yperen et al., 2016) described that excessive demands with low resources or how employees appraised those demands might have a detrimental effect on work motivation for autonomously motivated workers. Because autonomously motivated workers like to have the latitude to make decisions, leaders who delegate work and offer support in the form of communication and feedback motivate employees to complete their responsibilities (Allen, Alleyne, Farmer, McRae, & Turner, 2014). Increasing employee motivation should be another strategic focus area for business leaders.

Motivation is a reward-driven behavior. Many models fall into a two-category design depicting motivational sources as either intrinsic value or extrinsic value. Intrinsic motivation (Kundu & Gahlawat, 2016) refers to the personal satisfaction reward a person derives from doing a task they find mentally or physically pleasing. Extrinsic motivation comes from the result of a person's actions and not from the action itself. Trépanier's (2013) study of autonomous motivation showed employees suffered less from job demands if they were highly autonomously motivated. Several motivation models exist

today that expand on the two-part motivational model. Cognitive Evaluation Theory and Self-Determination Theory are two examples of motivation theories.

Leadership

Employees dissatisfied with their leadership may leave their jobs. Leadership is a practical skill of guiding others practiced by individuals and organizations alike. Some leaders inspire and influence employees behaviors (Cheng, Bartram, Karimi, & Leggat, 2016). Pandya (2014) claims that project leadership is critical to the success of the project. Galvin, Gibbs, Sullivan, and Williams (2014) reported that project leaders must be able to implement various leadership styles to drive their teams to deliver successful project outcomes. Because leadership is critical to project success, business leaders should understand how different leadership styles motivate and engage their project employees.

A struggle faced by all leaders is changing their ideas and visions into reality. Transformational leadership behaviors enable this change of their ideas by motivating and inspiring employees to action (Yao, Fan, Guo, & Li, 2014). Affiliative leaders as described by Chapman (2014) align with the job demands-resources model proposed by Bakker and Demerouti (2007) through team building efforts. Affiliative leaders provide the feedback team members need but stop short at providing negative feedback in favor of kind or positive words of encouragement. Authoritative and commanding leaders both give their teams needed direction (Chapman et al., 2014). However, the direction of leaders sometimes takes the form of a job demand versus a job resource, stifling project team autonomy (Bakker & Demerouti, 2007). Coaching leaders are a resource to the

team by way of their support, and democratic leaders become a resource by soliciting team agreement (Chapman et al., 2014). A detriment of the coaching leadership style is the myopic focus on single team members instead of team effectiveness as a whole (Chapman et al., 2014). Democratic leaders, however, are sometimes unable to drive their team's effectiveness due to seeking holistic agreement with their teams (Chapman et al., 2014). All leadership styles have strengths and weaknesses. Each style is appropriate for specific situations and conditions, and each relies on communication to build team relationships (Sarros, Luca, Densten, & Santora, 2014).

Rival Theories and Models

The JD-R model is but one of several psychological models and theories used to observe, test, and describe the integral parts of motivational behavior. Employee engagement is another such area. In the past three decades, researchers have conducted several studies and written books to understand better this phenomenon (i.e., the 153 references in this study, the Gallup Organization's engagement surveys, the UK MacLeod Report articles, and Hurley's (2017) book *The One Habit* to name a few). The increased attention in employee engagement over the past decade from the academic and business community suggest the importance of this phenomenon has gained widespread attention (Guest, 2014). The following section contains a discussion of a representative selection of the alternative models and theories regarding employee engagement.

Job Demand-Control (JDC) and Job Demand-Control-Support (JDCS) Models

Two popular frameworks used in research on job health and well-being characteristics are the job demand-control (JDC) and the job demand-control-support

(JD-CS) models (Ibrahim & Ohtsuka, 2014). The JDC model focuses on two essential work environment aspects: job demands and decision latitude also known as job control (Ibrahim & Ohtsuka, 2014). The JDC model postulates that a combination of job demands and job control can predict the well-being of organizational workers. The JDC model is limited in that it only incorporates job demands and job control aspects as a two-way interactive predictor on job strain and worker well-being with no social support inclusion (Ibrahim & Ohtsuka, 2014). The job demand-control-support (JD-CS) model provides a mechanism to include social support aspects from supervisors and co-workers that are missing in the JDC model (Ibrahim & Ohtsuka, 2014).

Self-Determination Theory

Self-determination theory (SDT) is a human motivation theory comprised of six mini-theories focused on personality development and function within social contexts. Deci and Ryan (1985) developed this meta-theory of motivation based on psychological research conducted by themselves and others. SDT, as described by Deci and Ryan (1985), provides the conditions for realizing personal potential while optimizing development, performance, and well-being. A similarity between SDT and JD-R is the social connection employees have with others. Organizations achieve need for relatedness when employees feel connected to others (Van den Broeck, Ferris, Chang, & Rosen, 2016). Self-determination theory (SDT) recognizes that human motivation consists of several different types (Poile, 2017). On the other hand, the jobs demands-resources model considers motivation a unitary concept that is influenced by both intrinsic and extrinsic means via two psychological processes (Bakker & Demerouti,

2007). Motivation is a concept used to explain human behaviors. Motivation plays a crucial role in SDT (Deci & Ryan, 1985), the JD-R (Bakker & Demerouti, 2007), and the job demands-strain relations (Bakker & Demerouti, 2007; Demerouti & Bakker, 2011; Trépanier et al., 2013). Researchers have shown in multiple studies that motivated employees experience less negative impact from job demands in the form of improved psychological and physical well-being (Rattrie & Kittler, 2014; Van Yperen et al., 2016; Wang et al., 2016).

Scholarly works on the subjects of the JD-R and SDT literature list leadership behaviors as a critical aspect of influencing employee's motivation and performance (Güntert, 2015; Schaufeli, 2015). The extant literature describes that intrinsic motivation provided through transformational leadership leads to positive employee outcome performance (Kuvaas, Buch, Weibel, Dysvik, & Nerstad, 2017). Conversely, Ariani (2015) describes that extrinsically motivated employees are more susceptible to burnout as a result of their personality. Still, the relationship between intrinsic motivation and extrinsic factors on employee motivation is still not clear (Cerasoli, Nicklin, & Ford, 2014) in part because the investigation of extrinsic motivation is rare (Kuvaas et al., 2017). Some employers will use a combination of intrinsic and extrinsic motivation as an all-out effort to increase employee motivation and outcome, although extant research shows that one or the other will be predominant in any given workplace.

Predictor and Dependent Variables

Recent research has indicated that factors and conditions experienced by project teams may be causes of project team member burnout (Pinto et al., 2014). In their study,

Pinto et al. (2014) identified three of these potential factors of project team burnout as (a) project cost, (b) project team member role, and (c) project schedule. These three potential factors were the independent variables used in this study. The dependent variable was burnout measured among members of project teams. The purpose of this quantitative correlation study was to examine for relationships between project cost, project team member role, project schedule, and burnout of project management team members located in the Southern United States. Burnout of project management team members was measured using the Maslach Burnout Inventory-General Survey (MBI-GS) instrument (Maslach & Jackson, 1981).

Project Cost

Project cost includes the total funding required to enable all project activities and work performed to complete the project objectives (Allen et al., 2014; Wysocki, 2014). Researchers (Pinto et al., 2016) studying burnout of project management personnel identified budget as a potential job demand that may lead to burnout. The available budget for a project may be insufficient to implement a complete solution (Pinto et al., 2016). Allen et al. (2014) attribute the failure of a patrol boat project to an inadequate budget not allowing for sufficient staffing of acquisition personnel.

Project cost and budget are also examples of potential job resources. Project funding is the financial vehicle that fuels the purchasing of goods and services enabling project personnel to deliver their projects. Allen et al. (2014) attribute the success of Procter & Gamble's New Growth Facility to having a project staff that can appropriately apportion their budgets, and also by sufficiently funding their projects. Pinto et al. (2016)

suggested future researchers examine why projects with larger budgets are more stressful and prone to burnout. Based on the recommendation of Pinto et al., I used this study to examine for relationships between project budget and burnout.

Project Team Member Role

Project roles cover many direct and indirect positions, each with a wide array of responsibilities and varied sources of work stressors. Project role is the specific job function that each project team member is responsible for performing (Pinto et al., 2014, 2016). Pinto et al. (2016) suggested that project team members may experience stress and burnout differentially depending on the project role they are assigned. The ambiguity of roles and responsibilities along with conflict between team member roles affect the member's stress and burnout (Beheshtifar & Omidvar, 2013; Pinto et al., 2016; Santos, Mustafa, & Gwi, 2015). Pinto et al. (2014) further posited that specific project roles might relate to the magnitude of job demands and job resources the team member experiences. Trépanier et al. (2013) confirmed the suspicion held by Pinto (2014) when they found that role overload, role ambiguity, and role conflict all had significant positive relationships with employee psychological distress. As a follow-up item from their study, Pinto et al. (2014) expressed the importance for future researchers to investigate how different project team members experience the project work. This study examined the differences in burnout reported by personnel filling various project roles to understand what differences may exist among the target group.

Project Schedule

Project managers and teams are responsible for managing all planned and unplanned activities related to implementing a project within the given schedule. Project schedules can vary from short durations of days or weeks to more extended time periods such as months or years (Pham & Hadikusumo, 2014). Forecasting project schedules at the beginning of a project make them difficult to achieve because knowledge at that time is limited (Wysocki, 2014). Schedules are updated periodically based on past work performance, anticipated future performance and new information made known to the project team and leadership (Allen et al., 2014). Schedules may progress per the plan (Fu & Zhang, 2016), be compressed to meet changing goals (Wysocki, 2014), or delayed due to unplanned factors (Pham & Hadikusumo, 2014) extending the length of time needed to complete the project deliverables.

Project schedules include the activities, dates, milestones, resources, and duration of the entire project from end to end (Allen et al., 2014; Pinto et al., 2014, 2016). A study conducted by Pinto et al. (2016) examining project personnel, demands, and burnout identified projects with durations of greater than two years as having an influence on the burnout measure emotional exhaustion. Conclusions from the Pinto study are that mega projects with durations over two years present an increased risk of burnout due to the demands inherent in their large size (Pinto et al., 2016). Pinto et al. suggested that future researchers should examine projects with different schedule lengths to understand how the duration of the project affects burnout of team members.

Burnout

The term burnout was introduced to the research community in the early 1970's by Herbert J. Freudenberger (1974) in a research reporting on the loss of motivation among social workers in California (Bakker et al., 2014). Burnout syndrome is a psychological impairment (Maslach & Leiter, 2016) made manifest by many physical and behavioral signs (Freudenberger, 1974). Freudenberger (1974) posited that the number and intensity of the signs of burnout might not be the same for each person or situation. Some physical signs of burnout are fatigue, headaches, drowsiness, and shallow breathing. Employees that feel stress in their work tend to exhibit negative behaviors (Yao et al., 2014). Behavioral signs of burnout are numerous and include emotional responses, anger, paranoia, overconfidence, and constant irritation. Burnout may lead to absenteeism (Chullen, 2014; Yao et al., 2014), presenteeism (Bakker & Costa, 2014; McGregor et al., 2016), and new or increased drug and alcohol usage (Freudenberger, 1974).

A consistent definition of burnout is exhaustion in several forms; emotional (Rahim & Cosby, 2016), physical (Freudenberger, 1974; Kristensen, Borritz, Villadsen, & Christensen, 2005; Santos et al., 2015) and mental (Steyn & de Klerk, 2015) exhaustion or as an extinction of motivation (Freudenberger, 1974) caused by workplace stress. Burnout is the dependent variable in this study. Research on occupational burnout is quite common today (Bakker & Costa, 2014; Fong, Ho, & Ng, 2014; Maslach & Leiter, 2016). Burnout is a problem that has become quite common in developed countries around the world (Shirom, 2005). The psychological cost of burnout on

employees leads to reduced output which in turn costs the employee's organizations high monetary losses (Shirom, 2005).

Maslach Burnout Inventory

Christina Maslach and Susan Jackson (1981) are two of the early pioneers of burnout study. Maslach and Jackson's (1981) model, the Maslach Burnout Inventory (MBI) was the first psychometric-based measure to spawn from the qualitative burnout studies that preceded it (Maslach & Leiter, 2016). Numerous researchers around the world select the MBI instruments for use in their studies of employee burnout (Bria et al., 2014; Kristensen et al., 2005). The following paragraphs will provide a brief overview of the MBI model evolution and uses.

Similar to the burnout research conducted by Freudenberger (1974), Maslach and Jackson's (1981) early research on burnout focused on the human service industry personnel. Continued research on burnout syndrome suggested the occupational hazard was prevalent in industries and professions that included personal interactions between the worker and clients such as those found in the human service industry (Bakker et al., 2014; Bria et al., 2014; Spinelli, Fernstrom, Galos, & Britt, 2016). In their research of burnout among professional human service staff workers, Maslach and Jackson (1981) confirmed Freudenberger's (1974) conclusion that interaction between the staff members and their clients was emotionally and physically taxing for the staff and that the stress experienced often led to staff burnout. Along with the detrimental exhaustion of the staff workers, Maslach and Jackson found that the workers also experienced cynical feelings towards their clients and that they had a propensity to evaluate themselves negatively.

The researcher's studies and the knowledge gained from studies preceding theirs led Maslach and Jackson (1981) to the development of the MBI model.

Maslach and Jackson's (1981) instrument created to measure the burnout syndrome for the human services industry was the Maslach Burnout Inventory-Human Services Survey (MBI-HSS). The MBI-HSS was the original instrument in the MBI series. Maslach and Jackson designed the instrument to analyze health and human service industry workers including, but not limited to, social workers, counselors, police (Maslach & Jackson, 1981), and clergy (Maslach Burnout Inventory, 2017). The model consisted of questions designed to measure stress in three subscales; emotional exhaustion, depersonalization, and personal accomplishment. A fourth subscale prevalent in the factor analysis of Maslach and Jackson's studies was involvement (1981). However, the involvement factor did not measure at or above unity in Eigenvalue as did the previous three components and is therefore not included in the MBI models (Maslach & Jackson, 1981). The initial MBI model gained popularity and use. However, the application was limited to the human services industries.

Later, research on burnout grew to include a broader community. Maslach and Jackson (1981) modified their model to enable its use in more far-reaching applications beyond the demanding interpersonal human services industry with the creation of the Maslach Burnout Inventory-Educators Survey (MBI-ES). The MBI-ES again included questions to measure burnout in the three subsets of emotional exhaustion, depersonalization, and personal accomplishment. This variation of the MBI instrument reduced the number of overall questions which were tailored to analyze those in the

education profession including teachers, school administrators, and even volunteers working in the educational arena (Bria et al., 2014). As it was with the MBI-HSS, the MBI-ES instrument gained credence and was used extensively in numerous studies in the 1980's and 90's (Bria et al., 2014; Kristensen et al., 2005). Although this adaptation also achieved widespread acceptance and use partly through expanding into new regions and being translated into different languages (Maslach & Leiter, 2016), the MBI-ES still applied to only a select industry leaving researchers at a disadvantage for application and comparison with other businesses and professions.

As the popularity and use of the two MBI models grew, the desire to use the instrument beyond the human service and education industries increased (Bakker et al., 2014). Changes to the instrument became necessary to make it fit for use in other industries (Maslach & Leiter, 2016). Once again Maslach and Johnson adapted their instrument to fit an even more extensive range making the instrument viable to measure individuals from virtually any profession (Maslach & Jackson, 1981; Maslach & Leiter, 2016). The new format for the model and instrument enabled researchers to study roles that were not tied specifically to social and educational interactions allowing a consistent model to be broadly applied across a wide array of organizations (Bakker et al., 2014). This latest form is the MBI-GS. The development of the MBI-GS instrument enabled branching beyond the human services and education fields making the instrument applicable to all professions. The MBI-GS has drawn much interest and current use from researchers (Feldt et al., 2014) and together with the two previous forms it has, at times, held a virtual monopoly in the research of burnout (Kristensen et al., 2005; Maslach,

Jackson, & Leiter, 1996). The MBI-GS quickly became the preferred version and most popular instrument for measuring burnout syndrome (Bria et al., 2014). Today the MBI-GS is the most frequently used version of the three MBI instruments (Feldt et al., 2014). The MBI-GS served as the test instrument for this study measuring burnout as three dependent variable constructs considered to be contributing factors leading to burnout syndrome (a) emotional exhaustion, (b) cynicism, and (c) professional efficacy (Bria et al., 2014; Upadyaya et al., 2016).

Burnout Constructs

Burnout is a syndrome of several components causing detrimental effects on personnel. Freudenberger (1974) used a dictionary description of burnout including the keywords fail, wear, and exhausted. Other researchers continuing work to understand burnout better added clarity and definition to the burnout symptoms. Using three subscales from their study data analysis, Maslach and Jackson (1981) defined burnout as three distinct constructs; emotional exhaustion, depersonalization, and reduced personal accomplishment. The Copenhagen Burnout Inventory (CBI) (Kristensen et al., 2005) also has three scales with which to measure burnout; personal burnout, work-related burnout, and client-related burnout. The Spanish Burnout Inventory (SBI) approach differs from that of the MBI and CBI by measuring burnout in four dimensions; enthusiasm toward the job, psychological exhaustion, indolence, and guilt (Carlotto, Gil-Monte, & Figueiredo-Ferraz, 2015). Common among the three burnout instruments is the measure of exhaustion in some form (emotional, physical, mental). This study used the MBI-GS instrument to measure the level of burnout among project management team members

located in the Southern United States.

Workers experiencing emotional exhaustion have difficulty giving of themselves emotionally to their work or others (Maslach & Jackson, 1981). Emotional exhaustion as described in Maslach and Jackson's (1981) report relates to drained emotional and psychological resources. Questions concerning emotional exhaustion in the MBI-GS instrument range from psychological to physical demonstrating this measure has a more significant effect on the individual than psychological alone. Likewise, the SBI psychological exhaustion measure also includes emotional and physical exhaustion considerations in the collection instrument (Carlotto et al., 2015). As with the MBI and the SBI, the CBI includes exhaustion as a critical component demonstrating the full acceptance of this measure among the various instruments in use today (Fong et al., 2014).

The most successful businesses are those with employees that actively participate in achieving the organizational goals and strategies. Employees engaged in delivering the business goals are employees exhibiting higher levels of personal and professional accomplishment (Maslach et al., 1996). Employees that suffer from the burnout component of reduced personal accomplishment, also known as reduced professional efficacy, tend to exhibit reduced performance (Pettijohn, Schaefer, & Burnett, 2014) and reduced engagement (Consiglio et al., 2016) at levels higher than their counterparts not suffering from burnout. Maslach et al. (1996) described workers suffering from reduced professional efficacy as being detrimental to their institutions. Higher professional efficacy among employees leads to improved social work environments (Consiglio et al.,

2016) and SWE's (Kundu & Lata, 2017). Increased perception of self-efficacy among employees leads to increased feelings of fulfillment among those employees and, in turn, increased engagement (Consiglio et al., 2016).

Employees experiencing the burnout component of depersonalization or cynicism may also be a detriment to their organizations. Cynicism is a three-dimensional pessimistic influence (affective, behavioral, and cognitive) that affects employees (Aslam, Ilyas, Imran, & Rahman, 2016; Yasin & Khalid, 2015). Employees experiencing cynicism often distrust their organizations, feel a sense of hopelessness, and lack commitment (Liegman, 2015; Yasin & Khalid, 2015). Cynicism affects employees' ability to accept organizational change causing higher turnover rates among those affected employees (Aslam et al., 2016; M. A. Khan, 2014).

Other Methodologies and Models

As a burnout instrument frequently selected, the MBI models are used extensively beyond the original region and are currently available in many languages (Bria et al., 2014; Mészáros, Ádám, Szabo, Szigeti, & Urbán, 2014). For instance, Mészáros et al. (2014) used a version of the MBI-HSS translated to the Hungarian language for a study in Hungary. Another study by Bria et al. (2014) used a translated version of the MBI-GS in Romania to determine the factorial validity of the Romanian translated instrument. This popularity does not come without opposition, however. Fong et al. (2014) reported that the MBI receives criticism from within the research community as having measures that do not reflect core burnout components. Fong et al. (2014) attributed the perceived MBI instrument weaknesses to be the cause of other researchers developing burnout

instruments to suit to their specific uses and languages (Carlotto et al., 2015; Moncada et al., 2014). The Athlete Burnout Questionnaire (ABQ), Bergen Burnout Inventory (BBI), Burnout Measure (BM), the Coach Burnout Questionnaire (CBQ), the Copenhagen Burnout Inventory (CBI), the Oldenburg Burnout Inventory (OLBI), the Shirom-Melamed Burnout Measure (SMBM) Inventory, and the Spanish Burnout Inventory (SBI) are a representation of instruments used to measure different aspects of burnout around the world today. The following paragraphs will provide an overview of some of these alternative burnout instruments and models.

Kristensen et al. (2005), introduced the Copenhagen Burnout Inventory (CBI). Like the MBI-GS instrument, the CBI includes fatigue or exhaustion in the measure of burnout. Unlike the MBI-GS, the CBI measures the burnout in three very different domains; personal, work, and client (Chiu et al., 2015; Fong et al., 2014; Kristensen et al., 2005). Kristensen et al. (2005) posit that sickness, absenteeism, self-medicating, and sleep issues are all correlates of burnout. The CBI is a viable alternative for researchers studying domain related burnout or when the factors of the MBI surveys do not provide the desired information (Chiu et al., 2015; Fong et al., 2014; Kristensen et al., 2005; Santos et al., 2015).

The Spanish Burnout Inventory (SBI) measures burnout using four dimensions; enthusiasm toward the job, psychological exhaustion, indolence, and guilt, captured within two profiles; cognitive deterioration (low job enthusiasm) and emotional deterioration also known as psychological exhaustion (Carlotto et al., 2015). The Burnout Measure (BM) (Fong et al., 2014) and the Shirom-Melamed Burnout Measure

(SMBM) (Fong et al., 2014) have a common focus of emotional exhaustion and fatigue similar to the Copenhagen Burnout Inventory and the Maslach Burnout Inventory.

Though used today, each of these rival instruments is used only within a limited geographical area and have not yet gained widespread use around the globe (Lundkvist, Stenling, Gustafsson, & Hassmén, 2014; Moncada et al., 2014).

Although widely accepted, the MBI series of instruments focus only on negative aspects of burnout measures. The Oldenburg Burnout Inventory (OLBI) is an alternative instrument that builds on the foundation of the MBI model using questions that have both positive and negative wording (Qiao & Schaufeli, 2011). The OLBI also examines physical and emotional exhaustion but expands cynicism beyond just the personal aspect to cover withdrawing from one's job as a whole which is a farther reach than the depersonalization examined for by the MBI-GS (Lundkvist et al., 2014). The Athlete Burnout Questionnaire (ABQ) and its later adaptation of the Coach Burnout Questionnaire (CBQ) are examples of burnout evaluation for specific industries (Lundkvist et al., 2014). Both of these burnout measuring tools are based on the three dimensions of the MBI model (Bria et al., 2014; Lundkvist et al., 2014). The ABQ and CBQ build on the MBI model by placing greater focus on exhaustion through the specific focus of physical exhaustion (Lundkvist et al., 2014).

The Bergen Burnout Inventory (BBI) also closely aligns with the MBI models by inclusion of the same three theoretical dimensions; exhaustion at work, cynicism toward work, and a feeling of inadequacy at work by employees (Feldt et al., 2014). Again, like the MBI, the BBI maintains its validity across different organizations (Feldt et al., 2014).

Another similarity to the MBI is the modification of the BBI from 25 items to 15 (Feldt et al., 2014) and once again to 9 items proven invariant across two samples. Feldt (2014) reported the factorial validity evidence of the 9 item BBI was limited to managerial samples only requiring further studies of employees from differing occupations.

Transition

Project management work is rife with constrained budgets, persistent conflict, demanding schedules, high demands, and low control creating stress, which may lead to burnout syndrome. The specific business problem was that some business owners, managers, and project leaders do not know the relationship between project cost, project team member role, project schedule, and project team member burnout. The purpose of this quantitative correlation study, grounded in the theoretical proposition that workplace stressors can cause the occupational hazard burnout among project management team members, was to examine the relationship between project cost, project team member role, project schedule, and burnout of project management team members. As applied to this study, the workplace stressors associated with project cost, project team member role, and project schedule, when left unmitigated by job resources, lead to project team member burnout. Next, Section 2 will contain the project information, and then, Section 3 will contain the presentation of findings.

Section 2: The Project

Section 2 of this study includes descriptions and information about the role of the researcher, the study participants, the research method, and the chosen research design. The development continues with population and sampling and the steps taken to ensure ethical treatment of the participants. Finally, this section includes discussion of the data collection process, analysis, and study validity topics.

Purpose Statement

The purpose of this quantitative correlation study was to examine the relationship between project cost, project team member role, project schedule, and project team member burnout. The targeted population consisted of project management team members located in the Southern United States. The independent variables were (a) project cost, (b) project team member role, and (c) project schedule. The dependent variable was burnout of individual project management team members. The implication for social change included the potential to provide project and business leaders with information about burnout predictors they can consider when assigning project teams or designing programs to reduce the effects of burnout and improve engagement, morale, and organizational profitability (Chen & Yu, 2014).

Role of the Researcher

In a quantitative study, the role of the researcher is collecting and testing data on a theory to answer the study hypotheses (Khan, 2014). As the sole researcher in this quantitative study, I was active in the selection, collection, analysis, and interpretation of data on burnout of project management team members (Judkins-Cohn, Kielwasser-

Withrow, Owen, & Ward, 2014). I was looking for a relationship between project cost, project team member role, project schedule, and burnout of project team members. The Statistical Package for the Social Sciences (SPSS) software enabled statistical calculations and analysis of the study data. The test results produced by the SPSS software package determine whether to accept or reject the null hypothesis.

Interpretation of the information collected in this study identified if relationships exist between project cost, project team member role, project schedule, and burnout of project management team members. Over the past 14 years, I have had direct involvement in managing projects and have also managed the portfolio of projects at a consumer goods manufacturing site. As a project team member, I have filled the cost engineer role and have occasionally served in an electrical engineering capacity. Because of my affiliation with project management in many capacities, I undoubtedly had an internal bias towards project management work, personnel, and systems. Therefore, I removed myself from biasing the data collection process by using SurveyMonkey to collect data from study participants. By limiting my involvement to providing the demographic criteria from which to select the study participants, I limited any chance to manipulate the process or alter the results inadvertently. To prepare for this role, I participated in training for protecting research participants from the National Institutes of Health (NIH). Appendix B includes a copy of my certificate of completion. Protecting the study participants' anonymity was vital in ensuring ethical treatment was afforded to all as described in the NIH training and the Belmont Report (1978) requirements.

The Belmont Report (1978) is an essential reference used by institutional review boards reviewing research involving human participants. The Belmont Report prescribes three fundamental principles to follow when conducting research using human subjects: (a) respect for persons, (b) beneficence or do not harm and, (c) justice for potential research participants (United States Department of Health & Human Services, 2015). I followed the ethical principles outlined in the Belmont Report. First, in the informed consent document, I explained my role as the researcher. The informed consent document, acknowledged by each participant, provided assurance of their anonymity and the confidentiality of their data. Finally, the informed consent document informed the participants of their right to withdraw from the study. I requested review and approval from the Walden University Institutional Review Board (IRB) for research ethics before I began actively collecting data. Appendix C contains a copy of survey questions study participants answered after reading the informed consent form.

Participants

Eligible participants for this study included project management personnel working on projects in the Southern United States. For this study, project management personnel included (a) project managers, (b) project superintendents, (c) project engineers, (d) project administrators, (e) project consultants, and (f) other project roles (see Pinto et al., 2014). The study analysis did not include any participants who had not worked in a project management capacity. Selection of the right participants was critical to obtaining accurate, meaningful data. An electronically signed informed consent form helped establish a working relationship with the participants. A potential challenge for

any researcher is gaining access to a participant pool. This challenge was overcome by locating participants and collecting data from them using the SurveyMonkey Audience pay-for-use service (SurveyMonkey Audience, 2014) and social media platforms with targeted project and construction management groups.

SurveyMonkey provided systematic random sampling services, which helped eliminate nonqualifying participants from inclusion. Systematic sampling is a technique that provides probabilistic sampling when selecting study participants who must meet a defined set of demographic criteria. Demographic information provided by the potential participants when they enrolled in the SurveyMonkey service guided the invitation process ensuring only eligible candidates completed the study questionnaire. Access to a participant pool is essential, but equally important is selecting the correct questions to fit the research method and design.

Research Method and Design

The nature of the research question influences the research design (Yin, 2014). Researchers have attempted to understand the world around them using objective empirical data, direct observational data, and deductive reasoning (Ritchie & Lewis, 2014). Three methodologies researchers can choose to address their research questions are quantitative, qualitative, and mixed-method (Venkatesh et al., 2013). The purpose of this study was to examine if relationships exist between project cost, project team member role, project schedule, and burnout of project team members. Therefore, this study followed a quantitative methodology with a correlational design, using survey data from participants. This section includes discussion of the available methods and designs

and explains the rationale for choosing the quantitative methodology and correlational design over the other options.

Research Method

Researchers conduct quantitative research to probe for relationships between predictor and dependent variables (Trafimow, 2014; Turner et al., 2013). Quantitative studies include descriptive statistics to describe the research data (Crede & Borrego, 2014). Researchers measure these proposed interactions between the predictor and dependent variables to answer their research questions (Crede & Borrego, 2014). The quantitative method was appropriate for this study because I was testing a theory by measurement to identify if a relationship between the proposed predictor variables and burnout existed.

Conversely, some researchers use the qualitative methodology to focus on exploring the subjective *how* or *why* type research questions to better understand a phenomenon (Bailey, 2014; Gillespie, Dietz, & Lockey, 2014; Yin, 2014), Hyett et al. (2014) described qualitative research as a method to understand the human lived experiences. Researchers use qualitative research to focus on a phenomenon philosophy (Sanjari, Bahramnezhad, Fomani, Shoghi, & Cheraghi, 2014). The focus of this study was relationships between variables, not an exploration of the subjective meanings of a phenomenon. Therefore, the qualitative research methodology was not appropriate.

Finally, researchers who want to gain the benefits of both research methodologies combine the quantitative and qualitative methods in one study (Mayoh & Onwuegbuzie, 2015; Venkatesh et al., 2013). Mixed method studies require the researcher to include a

qualitative approach while gathering and examining data through a quantitative lens. Although mixed method approaches may provide synergy and drive a more in-depth understanding, they present a challenge in the form of time and resource constraints for the researcher (Mayoh & Onwuegbuzie, 2015). This study included no qualitative elements. Therefore, the mixed methods approach was not appropriate.

Research Design

Design types available for quantitative studies include correlational, experimental, and quasi-experimental. Researchers employing an experimental design manipulate their variables or subjects and measure the results of their influence to understand cause and effect relationships (Serier, Benamara, Megueni, & Refassi, 2015; Venkatesh et al., 2013). This study was not intended to reveal cause and effect relationships. Manipulation of variables or test subjects was not included, eliminating experimental designs from consideration. Likewise, a quasi-experimental design is an ideal method when testing causal hypotheses (Eyyam & Yaratan, 2014). This study's purpose was to identify linear correlations between the study variables rather than examining for cause-effect relationships. Therefore, a quasi-experimental design was not appropriate for this study.

I chose a nonexperimental design for this study. Past researchers have chosen nonexperimental designs to identify relationships between study variables (Hunsaker, Chen, Maughan, & Heaston, 2015). Correlational designs may make use of multiple regression analysis to describe the relationships between the predictor and dependent variables (Tai, 2015; Turner et al., 2013). Correlational studies include numerical data, statistical analysis, and deductive reasoning (Mir & Pinnington, 2014). This study was

also intended to identify if relationships existed between the predictor and dependent variables and included statistical analysis along with deductive reasoning and numerical data. The correlational design was the most appropriate research design for this study of the relationship between project cost, project role, project schedule, and project team member burnout.

Population and Sampling

The population for this study consisted of project management team members in the Southern United States. Project management teams are widespread, may be found in any industry or business entity, and comprise several functional roles. For this study, project management personnel included (a) project managers, (b) project superintendents, (c) project engineers, (d) project administrators, (e) project consultants, and (f) other project roles (Pinto et al., 2014). Project management personnel work in various industries: construction, engineering, finance, healthcare, insurance, IT, manufacturing and many others. In 2014, the U.S. Department of Labor published statistics showing over 373,000 construction management positions in the United States (U.S. Department of Labor, Bureau of Labor Statistics, 2017). Although no statistics for project management personnel from other industries were able to be located, the potential pool of candidates from those industries was likely to be vast. The research question this study was intended to investigate is what the relationship between (a) project cost, (b) project team member role, (c) project schedule, and project team member burnout was. The project management population from the Southern United States was appropriate and

aligned with the research question by being project team members chosen through non-probabilistic sampling, ensuring the potential participants aligned with the study question.

Researchers choose nonprobabilistic or probabilistic sampling to select their participant pool for studies. Probabilistic sampling, such as simple random and systemic sampling, reduces potential sampling error because this process provides all population an equal chance to participate (El-Masri, 2017). Other potential benefits of probabilistic sampling are the heterogeneous nature, representativeness of the data, and generalization of a more extensive population (Solanki & Singh, 2015). Non-probabilistic sampling, such as availability and purposive sampling, choose participants based on the convenience of the researcher (Etikan, 2016) or the fit of the target population to the purpose of the study. This study followed a non-probabilistic, purposive sampling typology. This typology afforded the convenience of reaching and including only a population that fit the purpose of the study.

G*Power software version 3.1.9.2 provided the sample size range appropriate for generalizing the study results across a broader population (Faul, Erdfelder, Lang, & Buchner, 2007). The G*Power software produces an a priori power analysis of required sample size (Faul et al., 2007). Sample sizes that are too small are prone to have more substantial mean standard errors (Hopkins & Ferguson, 2014). As sample size increases so too do the accuracy of the test results (Sihoe, 2015). Inclusion in the a priori power analysis was eight predictors (a) project cost, (b) project schedule, (c) project managers, (d) project superintendents, (e) project engineers, (f) project administrators, (g) project consultants, and (h) other project roles. Final data analysis did not include surveys

indicating any job function outside of those mentioned. An a priori power analysis employing a medium effect size ($f = .15$), an alpha value of .05, and a power value of .80 for the multiple regression model required a minimum sample size of 109 participants. Increasing the desired output to a power value of .99 required an increase in participants to 211. The resulting range for participant sample size was 109 to 211 for this study is shown in Figure 2.

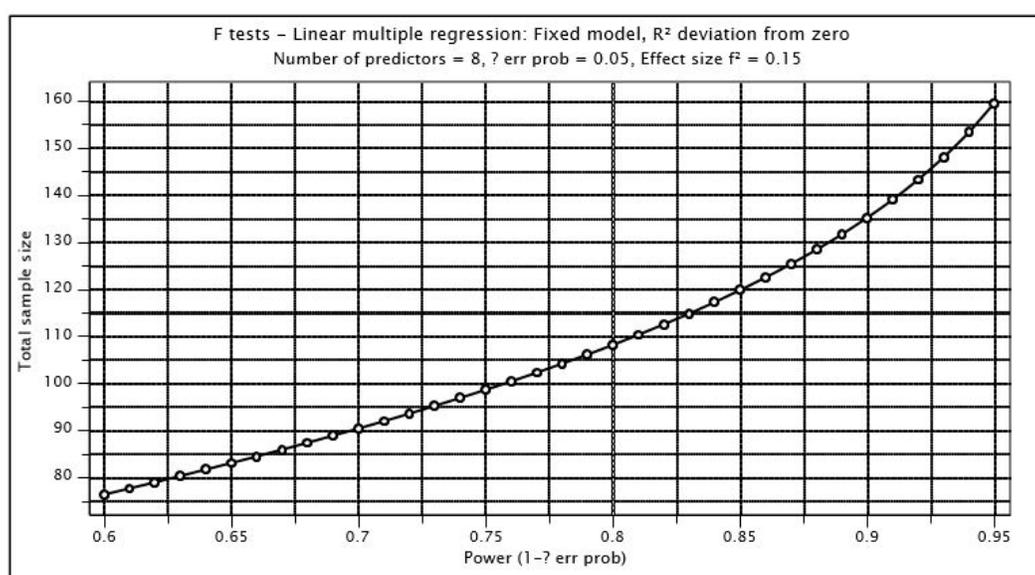


Figure 2. Power as a function of sample size.

Ethical Research

This ethical research section includes a description of the security plan employed to safeguard participant anonymity and researcher integrity. Ethical guidelines, required by law, and are vitally important for protecting the rights and welfare of study participants (Wao et al., 2014). Data collection did not begin until the Walden University IRB provided approval to proceed. I reviewed the IRB application and took steps to comply with the requirements contained therein to ensure the data collection process was

valid and approved. Congruent with the protocols of the Belmont Report (1978) I did strive to provide respect, beneficence, and respect for the study participants. The Walden IRB number for this study is 02-13-18-0497415.

Data collection took place using a SurveyMonkey administered survey. Participants implied consent by participating in the survey after reading an informed consent document which accompanied the survey material distributed by SurveyMonkey. Participants joined the survey voluntarily. The participants did have an option to withdraw from the survey. The informed consent form distributed with the SurveyMonkey information included the study purpose and procedures, outlined the role of the researcher and participants, and provided the communication channel for participants to withdraw from the study. The study participants received no direct reimbursement for participation. However, SurveyMonkey Contribute awarded a small sum of money to the participant's charity of choice established when they joined the service.

A compact disc is the storage medium for all information collected in this study; spreadsheets, SPSS datasets, and SurveyMonkey reports. The data will remain safe for five years as required by Walden University. A fireproof safe is the storage repository for the collected data from SurveyMonkey. The fireproof safe provided the security needed to ensure others are unable to access the compact disc. Data stored on the compact disc was evaluated using SPSS software on a password-protected computer.

Instrumentation

The survey instrument used in this study is the MBI-GS. Christina Maslach and Susan Jackson (1981) are two of the early pioneers of burnout study. Maslach and Jackson's model, the Maslach Burnout Inventory (MBI), was the first psychometric-based measure to spawn from the qualitative burnout studies that preceded it (Maslach & Leiter, 2016). Maslach and Jackson created the original MBI model in 1981. Mind Garden Inc., the publisher of the MBI-GS, provided the instrument and licensing for this study on a per use cost basis. Researchers have used the MBI-GS in numerous studies across a wide range of industries (Pinto et al., 2014; Westermann, Kozak, Harling, & Nienhaus, 2014). The original MBI instrument targeted solely on the experiences and interactions between social workers and their clients. The initial version consisted of 47 questions measuring burnout among the three subsets of emotional exhaustion, depersonalization, and personal accomplishment. The creators modified the original version twice producing the current version including 16 questions across three closely related subscales of exhaustion, cynicism, and professional efficacy. Extensive acceptance and use by the research community across the globe drove the selection of this instrument (Bria et al., 2014; Pinto et al., 2014). Next is a discussion of the three constructs measured by the MBI-GS instrument.

First, the MBI-GS measures for burnout in the construct of emotional exhaustion. Emotional exhaustion refers to workers experiencing drained emotional and psychological resources (Maslach & Jackson, 1981). Five questions measured the emotional exhaustion construct. Second, the MBI-GS measures for burnout in the

construct of cynicism. Cynicism is described as a three-dimensional pessimistic influence (affective, behavioral, and cognitive) that affects employees (Aslam et al., 2016; Yasin & Khalid, 2015). Again, five questions targeted the cynicism construct of burnout. Finally, the MBI-GS measures for burnout in the construct of professional efficacy. Workers exhibiting reduced professional efficacy tend to show signs of reduced performance (Pettijohn et al., 2014) and reduced engagement (Consiglio et al., 2016) when compared to their peers not suffering from burnout. The professional efficacy construct section consisted of six questions to measure burnout in this construct.

Participants entered their question answers in the MBI-GS using a Likert scale. The scale choices were nominal in type, ranging from 0 = never to 6 = every day. The MBI-GS has drawn much interest and current use from researchers (Feldt et al., 2014) and together with the two previous forms it has, at times, held a virtual monopoly in the research of burnout (Kristensen et al., 2005; Maslach, Jackson, & Leiter, 1996). The MBI-GS has become the preferred version and most popular instrument for measuring burnout syndrome (Bria et al., 2014). Widespread application, accessibility, and the ability to deliver the instrument via a web-based survey influenced the decision to use the MBI-GS for this study. The survey takes approximately 5 minutes to complete producing a low-level response burden for study participants. The MBI-GS measures burnout based on the scoring of each of the three individual constructs. High scores on the emotional exhaustion and cynicism scales indicate burnout in those particular constructs, whereas low scores on the professional efficacy construct indicate burnout. The three construct scores together determine the level of burnout as (a) high, (b) medium, or (c) low.

Three separate Finnish studies conducted over a seven-year period provided results showing a Cronbach alpha for the instrument measuring 0.89 to 0.90 (Ahola et al., 2014). All three factors in this study also had a Cronbach alpha score above 0.80 with one scoring above 0.90 indicating a good and excellent rating respectively. Confirmatory factor and convergent validity analysis conducted by Bria et al. (2014) in their Romanian studies of healthcare professionals ranged between 0.99 and 0.97 for the MBI-GS instrument. The study included the MBI-GS instrument as provided by Mind Garden Inc. with no alterations. Appendix D includes the Mind Garden Inc. permission to use the MBI-GS instrument in this study of burnout among project management team members in the Southern United States. The next section will describe the data collection technique employed for this study.

Data Collection Technique

This section describes the technique used to collect data as well as the advantages and disadvantages of the collection technique. The research question I attempted to answer with this study was: What is the relationship between (a) project cost, (b) project team member role, (c) project schedule, and project team member burnout? The survey instrument used in this study was the MBI-GS from Mind Garden Inc.

Mind Garden Inc. provided the MBI-GS instrument licensing for the study on a per use cost basis. Administering the MBI-GS instrument to the qualified study participants took place via the SurveyMonkey platform, pay for use service (SurveyMonkey Audience, 2014). SurveyMonkey Audience made available a pool of potential candidates over 30 million strong. Participants available in the SurveyMonkey

Audience service also belong to the SurveyMonkey Contribute service. SurveyMonkey Contribute pays a small sum to charities selected by the participants on their behalf for each survey they complete (SurveyMonkey Audience, 2014). Potential participants for the study were randomly selected by SurveyMonkey Audience (2014) based on the demographic information they entered when they joined the service. Potential participants continued to receive participation solicitations until the required number of fully completed surveys meeting the identified sample size was attained (SurveyMonkey Audience, 2014). SurveyMonkey Audience is a favorite data collection tool in scholarly research (Motil, 2015).

Data Analysis

The research question for this study was, what is the relationship between (a) project cost, (b) project team member role, (c) project schedule, and project team member burnout? The null hypothesis for this study was: There is no relationship between (a) project cost, (b) project team member role, (c) project schedule, and project team member burnout. The alternative hypothesis for this study was: There is a relationship between (a) project cost, (b) project team member role, (c) project schedule, and project team member burnout.

The goal of this study was to understand what relationship may exist between specific project stressors and burnout of project team members. Quantitative research is a method used to reveal if relationships exist between the study variables (McLaughlin, Bush, & Zeeman, 2016). I examined the extent of the relationship between the three predictor variables and the dependent variable following a correlational design. Multiple

linear regression provided the multivariate analysis needed to identify the relationship between the numerous variables. Multiple linear regression analysis was appropriate for this study because the analysis includes multiple predictor variables (Chen, Li, Wu, & Liang, 2014). The output of multiple linear regression is a linear equation model showing the relationship between the predictor and dependent variables (Lazar, Mouzdahir, Badia, & Zahouily, 2014). Multiple linear regression provided the means to examine the study variables that other analyses did not.

Regression analyses techniques not chosen for this study included bivariate linear regression, hierarchical multiple regression, and stepwise linear regression. Bivariate linear regression includes a single predictor variable and a single dependent variable which did not fit the three predictors included in this study (Green & Salkind, 2017). Hierarchical multiple regression includes utilizing control or covariate variables to control the effect on the independent variable (Hopkins & Ferguson, 2014; Newton & Teo, 2014). Stepwise regression analysis identifies and orders the input of independent variables based on the identification of those subsets with the most substantial relationship to the dependent variable (Elzamly & Hussin, 2014; Hopkins & Ferguson, 2014). Next is a discussion of the study data handling.

A problem researchers must prepare for is missing or otherwise corrupt data (Akbaş, 2017). Data cleaning is the act of detecting corrupt, incorrect, or missing data and proceeding to correct or eliminate it from the study dataset (Salem & Abdo, 2016). When survey results include missing or corrupt data, the researcher has the option to discard the data (Huang, Liu, & Bowling, 2015; Salem & Abdo, 2016), or implement a

method to substitute the data with other meaningful information (Salem & Abdo, 2016; Wu, Jia, & Enders, 2015). Corrupt data limiting is made possible by the online survey method the study will implement. The electronic survey format eliminated illegible entries and incomplete survey responses from inclusion in the results. Survey instructions informed participants to complete all entry fields for inclusion in the study results. As intended, this survey included no incomplete responses in the results calculations.

According to Green and Salkind (2017), linear regression analysis should include four assumptions (a) homoscedasticity of error variance, (b) independence, (c) linearity, and (d) normality. Failure to meet any of the four assumptions is likely to result in erroneous findings manifesting as Type 1 or Type 2 errors. First, homoscedasticity is the assumption that each independent or predictor variable has a relationship with the dependent variable causing all variance of data to be the same for each level of the predictor variable. Second, the assumption of independence expects that the data have no non-patterned residuals indicating there are no serial correlations. Third, the researcher is to assume a linear relationship exists between their independent and dependent variables (Harrell, 2015). Normality is a fourth assumption that the difference between expected and predicted values creates a normal distribution with zero skew or kurtosis (McAlevy & Stent, 2018). The researcher should test for each assumption.

I performed the correlation analyses of survey data using SPSS 24 software to determine the relationship strengths that exist between the study variables. Data analysis will only include completed surveys with interpretable data.

Study Validity

Researchers concerned with the strength and validity of their studies gain credibility and confidence among the research community when they ensure their measurements accurately represent the subject of measure. Creating or selecting the correct instrument(s) is a vital step toward making those accurate measurements providing repeatability, reliability, and validity of quantitative studies (Rubin & Babbie, 2016). Internal and external sources may threaten the validity of a study (Ronau et al., 2014.). Study validity is also subject to statistical conclusion validity (Kratochwill & Levin, 2014).

Internal and External Validity

Researchers conducting experimental or quasi-experimental studies should be concerned with internal validity. Internal validity refers to the accuracy of inferences made about causal relationships among study variables (Neill & Tuckey, 2014; Pirog, 2014). Researchers conducting experimental and quasi-experimental studies manipulate independent variables and record the effect on dependent variables to test causal inferences (Aguinis & Edwards, 2014; Neill & Tuckey, 2014). Because this study design was correlation and non-experimental, internal validity was not relevant (Chambliss & Schutt, 2016; Schalock, Gomez, Verdugo, & Claes, 2017). However, threats to statistical conclusion validity were relevant as discussed later.

External validity relates to how well results from a study are generalizable or relate to a population outside of the study geography (Lancsar & Swait, 2014). Data that is valid in one context may not hold the same validity in another. Project management

teams in the Southern United States may not demonstrate the same results as project management teams in other geographies like the Midwestern United States due to different personnel demographics, geographical norms and customs, and regional business working conditions. (Aguinis, 2014).

Statistical Conclusion Validity

Statistical conclusion validity refers to the extent researchers can make inferences about study variables from study data analysis (Gibbs & Weightman, 2014), using the appropriate statistical tools (Nayak, Mukherjee, Pandit, & Pradhan, 2018). Two types of statistical conclusion validity errors exist (Heyvaert & Onghena, 2014). Type I errors are incorrectly accepting the alternative hypothesis by reflecting a relationship exists when one does not (Gaskin & Happell, 2014). Type II errors are incorrectly accepting the null hypothesis by reflecting that a relationship does not exist when in fact it does (Gaskin & Happell, 2014). The two types of errors are direct opposites, assessing a relationship between the variables exists when it does not and assessing that no relationship between the variables exists when one or more does (Kratochwill & Levin, 2014; Neall & Tuckey, 2014). This quantitative correlation study examined for relationships among three independent predictor variables: project cost, project team member role, and project schedule and one dependent variable: burnout of project team members. Factors to examine for statistical conclusion validity in this study are (a) data assumptions, (b) sample size, and (c) instrument reliability.

I used the G*Power software version 3.1.9.2 to determine the sample size range appropriate for generalizing the study results to a broader population (Faul et al., 2007).

G*Power is free to use, and screenshots are also free to use without permission provided researchers cite the owners in their paper (Faul et al., 2007). The G*Power software produces an a priori power analysis of required sample size. An a priori power analysis employing a medium effect size ($f=.15$), an alpha value of .05, and a power value of .80 for multiple regression models required a minimum sample size of 109 participants. Increasing the desired output to a power value of .99 required an increase in participants to 211. The resulting range for participant sample size is 109 to 211 for this study (see Figure 2). The SurveyMonkey pay for use service, and social media platforms provided access to a vast participant pool ensuring an adequate sample response to achieve statistical validity. The survey population was not selected using a simple random process as Pirog (2014) suggested. The population was randomly selected based on specific demographic requirements. Because the purposive randomly chosen participants have project management backgrounds, the study results could be generalizable to a broader project management community.

Study instruments are critical to providing a robust and accurate result requiring the instrument to be reliable and valid (Manolov, 2017). The instrument used for data evaluation was the MBI-GS. The MBI-GS has held a virtual monopoly in the past for burnout research (Kristensen et al., 2005; Maslach et al., 1996) and is currently the leading instrument researchers use to measure burnout syndrome (Roelen et al., 2015).

Transition and Summary

Key points made in Section 2 are the purpose of the study, the methodology, and the design chosen to examine the relationship between project cost, project team member

role, project schedule, and burnout of project team members. A discussion of the researcher's role and the study participants covers the human interactions that will take place in the study. The sampling method, data collection instrument and technique, and data analysis together added credence to the study validity section. Section 2 included a description of the purpose of this qualitative correlational study.

Section 3 contains the presentation of findings. Next, application to professional practice and implications for social change relate the study to the project management community in the Southern United States. Then, recommendations for action and future research provide information for businesses to engage employee burnout as well as what future research applications can provide increased insight into burnout. Finally, this section ends with personal reflections and the conclusion of the study.

Section 3: Application to Professional Practice and Implications for Change

Section 3 includes a brief introduction and study overview, a presentation of the research findings, a discussion of the application to professional practice, and a reflection on how the findings of this study may influence social change. This section also includes researcher recommendations for action and recommendations for future research to build on the findings of this study. Finally, this section ends with personal reflections and the conclusion of the study.

Introduction

The purpose of this quantitative correlational study was to examine the relationship between project cost, project team member role, project schedule, and project team member burnout. The targeted population consisted of project management team members working in the Southern United States. This section includes the findings and data analysis summary. Descriptive statistics were used to explore the trends in the nominal and interval level variables. Cronbach's alpha verified the reliability of the three individual burnout constructs. The null hypothesis is accepted, and the alternative hypothesis rejected. Testing confirmed data homoscedasticity, independence, linearity, and normality assumptions. Multiple linear regression analysis testing conducted on the study data indicated no statistically significant relationship exists between the study variables; project cost, project team member role, project schedule, and the three constructs of burnout. Statistical significance was evaluated at the widely accepted level, $\alpha = .05$.

Presentation of Findings

In this section, I will discuss the assumptions testing, present the descriptive and inferential testing, discuss the findings, and conclude with an overall summary of the study findings. The overarching research question for this study was as follows: What is the relationship between (a) project cost, (b) project team member role, (c) project schedule, and project team member burnout? The two study hypotheses are as follows:

H_0 : There is no relationship between (a) project cost, (b) project team member role, (c) project schedule, and project team member burnout.

H_A : There is a relationship between (a) project cost, (b) project team member role, (c) project schedule, and project team member burnout.

Survey participants answered six demographic questions, three questions related to the independent variables, and 16 MBI-GS instrument questions to measure their burnout levels. For this study, burnout measurement included three individual constructs (a) cynicism, (b) exhaustion, and (c) professional efficacy. I tested the survey participant data using multiple linear regression models with the SPSS version 24 to examine for statistically significant relationships between (a) project cost, (b) project team member role, (c) project schedule, and burnout of project team members. Test results showed no significant relationship between the three predictor variables and the three constructs of burnout. Therefore, it was not possible to accept the null hypothesis in favor of the alternative hypothesis.

Pre-Analysis Data Screen

SurveyMonkey Audience and social media groups provided the survey respondents for this study. In total, 189 respondents participated in the online survey. Of the 189 attempts, 159 respondents completed all survey questions as required for inclusion in the final study results. The final analyses incorporated all 159 participants.

Descriptive Statistics

Demographic Frequencies and Percentages

A few noteworthy frequencies and percentages, discussed below, were evident from the survey results. First, male respondents outnumbered female respondents by only a small margin in the observed category of gender ($n = 84$, 53%). Next, participants whose age ranged from 25 to 34 years topped the category of age ($n = 42$, 26%), followed closely by the 45 to 54 age group. Then, the highest observed education level of participants was a Bachelor's degree ($n = 63$, 40%) followed by a Master's degree. Together these two groups totaled nearly 70% of the survey respondents. Finally, survey participants from the construction industry made up nearly one-third of the observed industry category ($n = 45$, 28%). Table 1 contains frequencies and percentages related to the study participants.

Table 1

Frequency Table for Demographics

Variable	<i>n</i>	%
Gender		
Female	75	47.17
Male	84	52.83
Age		
18 to 24	5	3.14
25 to 34	42	26.42
35 to 44	37	23.27
45 to 54	40	25.16
55 to 64	32	20.13
65 to 74	3	1.89
Education		
Associates degree	7	4.40
Bachelor's degree	63	39.62
Doctoral degree	4	2.52
GED	2	1.26
High school	8	5.03
Master's degree	46	28.93
Some college	20	12.58
Some graduate school	9	5.66
Industry		
Construction	45	28.30
Education	10	6.29
Government	17	10.69
Manufacturing	27	16.98
Other	34	21.38
Technology	26	16.35

Note. Due to rounding errors, percentages may not equal 100%.

Independent Variable Frequencies and Percentages

This study contains three independent variables: project cost, project team member role, and project schedule length. The survey results for questions related to the independent variables follow. First, the most common project size in \$US for the surveyed group was \$0-499,000 ($n = 43$, 27%). Next, project managers represented more than half of the survey respondents ($n = 95$, 60%), four times more than the next most significant group. Last, the longest project schedule observed was between 1 and 2 years ($n = 51$, 32%) with projects greater than 2 years drawing a close second ($n = 47$, 30%). Table 2 shows the independent variable frequencies and percentages related to the study participants.

Table 2

Frequency Table for Independent Variables

Variable	<i>n</i>	%
Project cost		
Between \$0-499,000	43	27.04
Between \$10-100 million	35	22.01
Between \$1-10 million	36	22.64
Between \$500,000-1 million	29	18.24
More than \$100 million	16	10.06
Current project role		
Design or management consultant	11	6.92
Other role	24	15.09
Project administrator or clerk	10	6.29
Project engineer	16	10.06
Project manager	95	59.75
Project superintendent	3	1.89
Longest project schedule		
< 3 months	11	6.92
Between 1 and 2 years	51	32.08
Between 3 months and 6 months	26	16.35
Between 6 months and 1 year	24	15.09
More than 2 years	47	29.56

Note. Due to rounding errors, percentages may not equal 100%.

Reliability

Because variable relationships are not always observable, they must be inferred and then tested by examination of data (Vaske, Beaman, & Sponarski, 2017). One such test used to examine for internal reliability is the Cronbach's alpha (Vaske et al., 2017). George and Mallory (2017) suggest the following guidelines when evaluating the Cronbach's alpha coefficients: > .9 excellent, > .8 good, > .7 acceptable, > .6 questionable, > .5 poor, and \leq .5 unacceptable. Three separate Finnish studies showed a

Cronbach's alpha for the MBI-GS instrument measuring 0.89 to 0.90 (Ahola et al., 2014). Cronbach's alpha coefficients were calculated for the cynicism, exhaustion, and professional efficacy scales in this study. Like the three Finnish studies, the Cronbach's alpha coefficients for all three scales measured met the acceptable level of internal consistency with two rating *good* and one rating *excellent*. Table 3 presents the results of the reliability analysis.

Table 3

Reliability Table for Cynicism, Exhaustion, and Professional Efficacy

Scale	No. of Items	α
Cynicism	5	0.87
Exhaustion	5	0.91
Professional Efficacy	6	0.84

Note. $N = 16$.

Summary Statistics for Interval Variables

The observations for cynicism had an average of 1.93 ($SD = 1.54$, $SE_M = 0.12$, $Min = 0.00$, $Max = 6.00$). The observations for exhaustion had an average of 2.60 ($SD = 1.55$, $SE_M = 0.12$, $Min = 0.00$, $Max = 6.00$). The observations for professional efficacy averaged 4.95 ($SD = 1.13$, $SE_M = 0.09$, $Min = 0.00$, $Max = 6.00$). Table 4 presents the descriptive statistics for the three MBI subscales.

Table 4

Summary Statistics Table for Interval and Ratio Variables

Variable	M	SD	SE_M
Cynicism	1.93	1.54	0.12
Exhaustion	2.60	1.55	0.12
Professional efficacy	4.95	1.13	0.09

Note. $N = 159$.

Pearson Correlations Between Variables of Interest

Examination of correlations between variables of interest tested for the absence of multicollinearity. Multicollinearity refers to predictor variables highly associated with one another, which is a limitation of multiple linear regressions. Garcia (2015) states that multicollinearity exists when the predictor variables have a high correlation ($r > .90$). None of the correlations between the variables of interest demonstrated collinearity validating the assumption for the absence of multicollinearity. Tables 5-7 present the findings and correlations.

Table 5

Pearson Correlations for the Cynicism Subscale and Variables of Interest

Variable	1	2	3	4	5	6	7	8
Cynicism	1							
Project Cost	-.001	1						
Superintendent	-.018	.100	1					
Engineer	.054	.107	-.046	1				
Administrator	.168*	.000	-.036	-.087	1			
Consultant	.029	.080	-.038	-.091	-.071	1		
Other Role	.040	.147	-.058	-.141	-.109	-.115	1	
Longest project schedule	.001	.458*	.080	.071	.039	-.073	.117	1

Note. *Denotes significant correlation at .05. $N = 159$.

Table 6

Pearson Correlations for the Exhaustion Subscale and Variables of Interest

Variable	1	2	3	4	5	6	7	8
Exhaustion	1							
Project Cost	-.015	1						
Superintendent	.018	.100	1					
Engineer	.100	.107	-.046	1				
Administrator	.121	.000	-.036	-.087	1			
Consultant	-.119	.080	-.038	-.091	-.071	1		
Other Role	-.109	.147	-.058	-.141	-.109	-.115	1	
Longest project schedule	.036	.458*	.080	.071	.039	-.073	.117	1

Note. *Denotes significant correlation at .05. $N = 159$.

Table 7

Pearson Correlations for the Professional Efficacy Subscale and Variables of Interest

Variable	1	2	3	4	5	6	7	8
Professional efficacy	1							
Project cost	-.052	1						
Superintendent	-.008	.100	1					
Engineer	-.106	.107	-.046	1				
Administrator	-.123	.000	-.036	-.087	1			
Consultant	-.010	.080	-.038	-.091	-.071	1		
Other role	-.073	.147	-.058	-.141	-.109	-.115	1	
Longest project schedule	.005	.458*	.080	.071	.039	-.073	.117	1

Note. *Denotes significant correlation at .05. $N = 159$.

Inferential Analyses

Regression Predicting Cynicism

A linear regression analysis of project cost, superintendent, engineer, administrator, consultant, other role, and longest project schedule was conducted to assess whether the independent variables significantly predicted cynicism. The regression analyses included all variables leaving none out. However, examination of the normality of residuals and homoscedasticity of residuals assumptions occurred before conducting the linear regression.

Normality. A Q-Q scatterplot provided the normality evaluation (Jupiter, 2017; McAlevey & Stent, 2018; Yang & Mathew, 2018). The value of the Q-Q scatterplot is in the comparison of the normal, or expected, bell curve compared to the actual data. The graph calculations compare study data points with a theoretical bell curve making up the display represented against a single straight line drawn within the Q-Q plot. If the study

data points plot closely along the straight line, the normality of the data is assumed.

Figure 3 is the Q-Q scatterplot for normality.

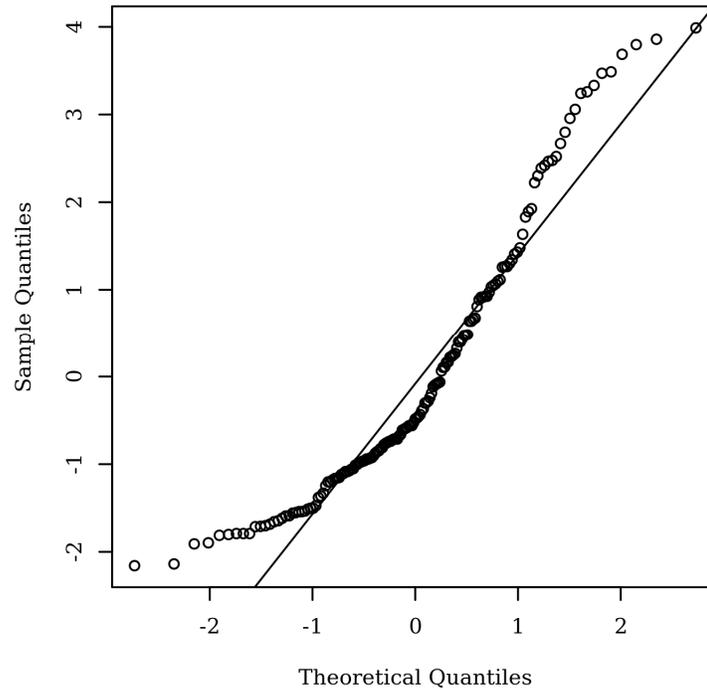


Figure 3. Q-Q scatterplot testing normality of cynicism.

Homoscedasticity. Homoscedasticity or error variance is an assumption for which researchers should test (Green & Salkind, 2017). A method used by many researchers to test for homoscedasticity is to plot the residuals of the study data against predicted values (Jupiter, 2017; McAlevey & Stent, 2018; Yang & Mathew, 2018). Data points that appear non-random indicate a violation of the homoscedasticity assumption. Data points randomly distributed, showing no curvature and having a mean of zero demonstrates the realization of this assumption. Figure 4 presents a scatterplot of predicted values and model residuals.

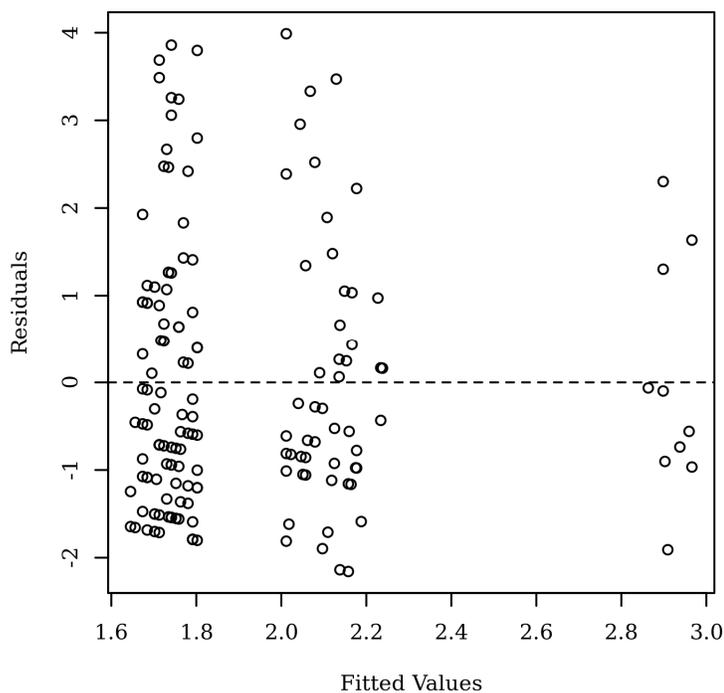


Figure 4. Residuals scatterplot testing homoscedasticity.

Results. The linear regression model to predict cynicism did not produce significant findings, $F(7,151) = 0.94$, $p = .475$, $R^2 = 0.04$, indicating project cost, superintendent, engineer, administrator, consultant, other role, and longest project schedule did not explain a significant proportion of variation in cynicism. Because the overall model was not significant, no further examination of the predictor variable effects on cynicism was warranted. Table 8 displays the results of the regression model.

Table 8

Results for Linear Regression with Project Cost, Superintendent, Engineer, Administrator, Consultant, Other Role, and Longest Project Schedule predicting Cynicism

Variable	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	95% C.I.	
						Lower	Upper
(Intercept)	1.84	0.39	0.00	4.75	< .001	1.07	2.61
Project cost	-0.03	0.11	-0.02	-0.27	.788	-0.24	0.18
Superintendent	0.04	0.91	0.00	0.05	.962	-1.75	1.84
Engineer	0.46	0.42	0.09	1.10	.271	-0.37	1.30
Administrator	1.20	0.51	0.19	2.34	.021	0.18	2.21
Consultant	0.37	0.50	0.06	0.75	.454	-0.61	1.35
Other role	0.37	0.36	0.09	1.02	.308	-0.34	1.07
Longest project schedule	-0.01	0.11	-0.01	-0.10	.922	-0.23	0.21

Note. Results: $F(7,151) = 0.94, p = .475, R^2 = 0.04$

Regression Predicting Exhaustion

Again, a linear regression analysis of the independent variables project cost, superintendent, engineer, administrator, consultant, other role, and longest project schedule determined if the independent variables significantly predicted the dependent variable exhaustion construct. Keeping the analyses consistent once again required choosing the enter variable selection method for the linear regression model. As was the case for the cynicism model, before conducting the linear regression, the assumptions of normality of residuals and homoscedasticity of residuals were examined.

Normality. Examination of a Q-Q scatterplot enabled evaluating for normality (Jupiter, 2017; McAlevey & Stent, 2018; Yang & Mathew, 2018). The Q-Q scatterplot compares the study data against the theoretical bell curve for normality. The test plot shows that the study data points align well with the straight line representing the normal,

or expected outcome. Normality is assumed based on the alignment of the data points to the pre-defined line. Figure 5 presents the Q-Q scatterplot for normality of the exhaustion construct of burnout.

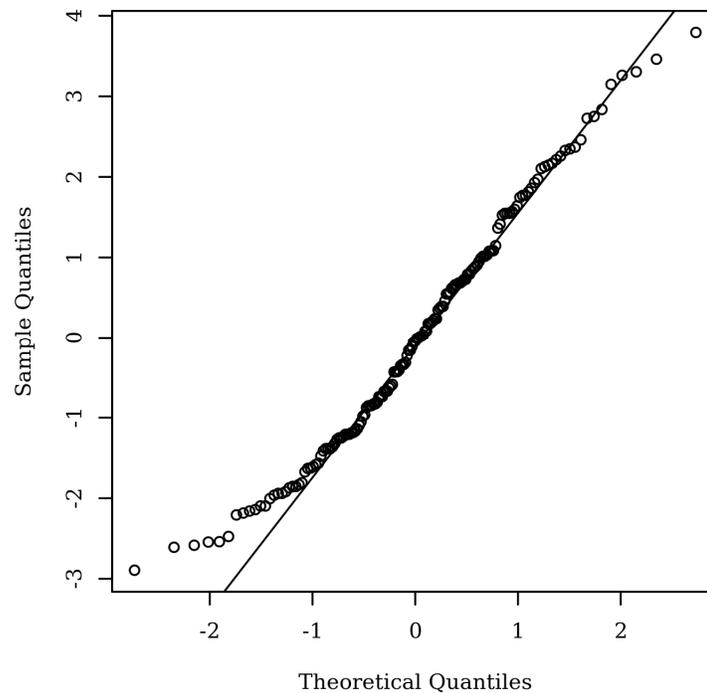


Figure 5. Q-Q scatterplot testing normality of exhaustion.

Homoscedasticity. Homoscedasticity or error variance is an assumption for which researchers should test (Green & Salkind, 2017). A method used by many researchers to test for homoscedasticity is to plot the residuals of the study data against predicted values (Jupiter, 2017; McAlevey & Stent, 2018; Yang & Mathew, 2018). Data points that appear non-random indicate a violation of the homoscedasticity assumption. Data points randomly distributed, showing no curvature and having a mean of zero demonstrates the realization of this assumption. Figure 6 presents a scatterplot of predicted values and model residuals.

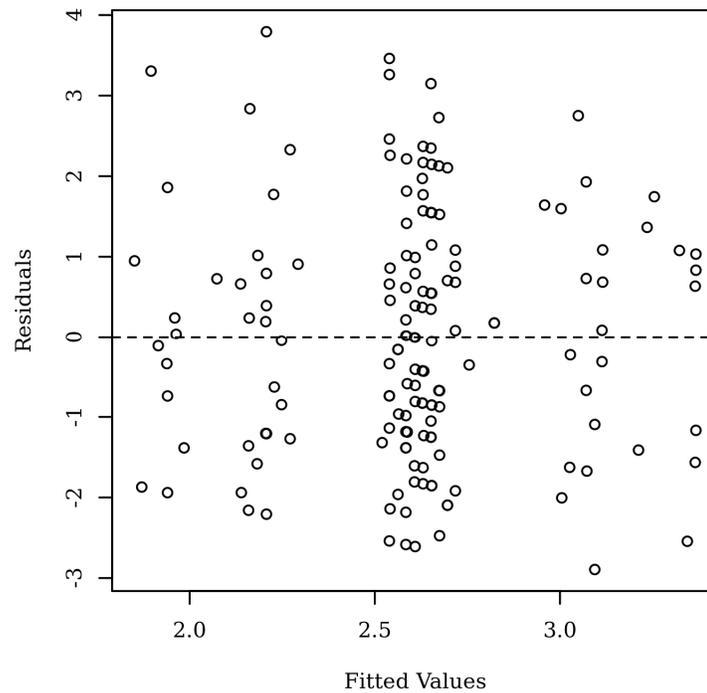


Figure 6. Residuals scatterplot testing homoscedasticity.

Results. As was the case with cynicism, the linear regression model for exhaustion showed no significance, $F(7,151) = 1.07$, $p = .384$, $R^2 = 0.05$, indicating project cost, superintendent, engineer, administrator, consultant, other role, and longest project schedule did not explain a significant proportion of variation in exhaustion. As was the case with cynicism, individual predictors were not evaluated further because the model indicated no significance. Table 9 summarizes the results of the regression model for exhaustion.

Table 9

Results for Linear Regression with Largest Project Value, Superintendent, Engineer, Administrator, Consultant, Other Role, and Longest Project Schedule predicting Exhaustion

Variable	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	95% C.I.	
						Lower	Upper
(Intercept)	2.52	0.39	0.00	9.01	< .001	1.74	3.29
Largest project value	-0.02	0.11	-0.02	-0.20	.840	-0.23	0.19
Superintendent	0.17	0.92	0.01	0.18	.854	-1.64	1.98
Engineer	0.44	0.42	0.09	1.04	.300	-0.40	1.28
Administrator	0.69	0.52	0.11	1.34	.181	-0.33	1.71
Consultant	-0.67	0.50	-0.11	-1.34	.183	-1.66	0.32
Other role	-0.42	0.36	-0.10	-1.18	.241	-1.14	0.29
Longest project schedule	0.04	0.11	0.04	0.40	.689	-0.18	0.26

Note. Results: $F(7,151) = 1.07$, $p = .384$, $R^2 = 0.05$

Regression Predicting Professional Efficacy

Once more, a linear regression analysis provided an assessment of whether project cost, superintendent, engineer, administrator, consultant, other role, and project schedule significantly predicted the burnout construct of professional efficacy. As in the previous regression models, the enter variable selection method included all predictors to guide the linear regression model. Examination for assumptions of normality and homoscedasticity of residuals preceded the linear regression effort.

Normality. Normality was evaluated using a Q-Q scatterplot (Jupiter, 2017; McAlevey & Stent, 2018; Yang & Mathew, 2018). The Q-Q scatterplot examines the distribution of the residuals with a theoretical normal distribution. In the Q-Q scatterplot, a solid diagonal line represents a normal distribution. If the data points from the study run

near the line, normality of the study data is assumed to be true. Figure 7 presents the Q-Q scatterplot for normality.

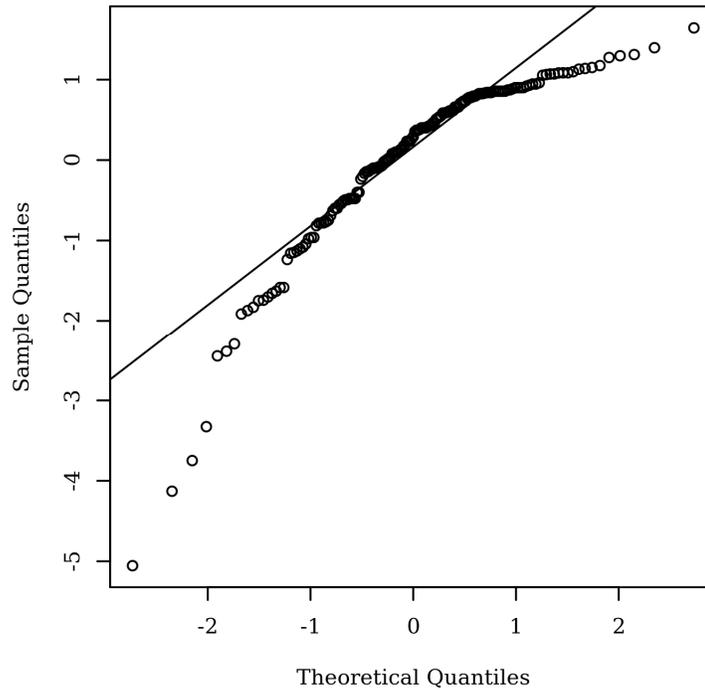


Figure 7. Q-Q scatterplot testing normality of professional efficacy.

Homoscedasticity. Homoscedasticity was evaluated by plotting the residuals against the predicted values (Jupiter, 2017; McAlevey & Stent, 2018; Yang & Mathew, 2018). The assumption is considered met if the points appear randomly distributed with a mean of zero and no apparent curvature. Figure 8 presents a scatterplot of predicted values and model residuals.

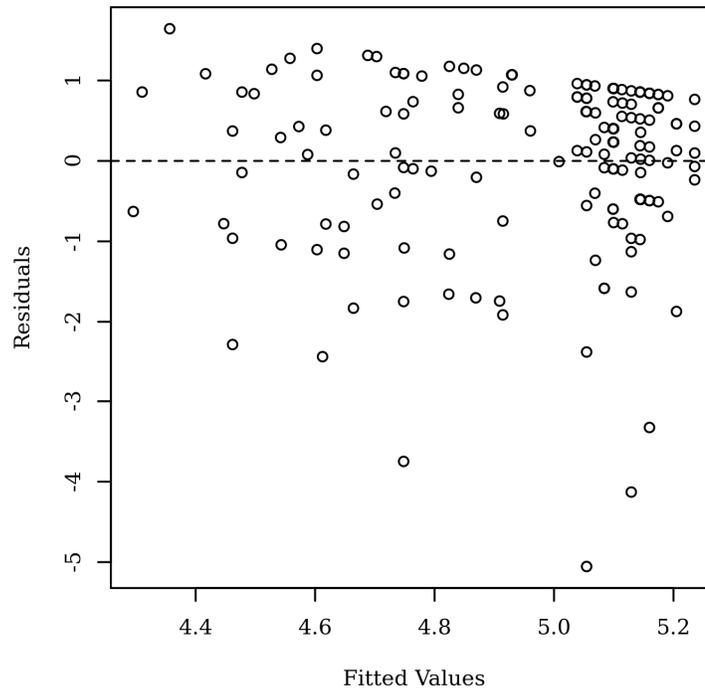


Figure 8. Residuals scatterplot testing homoscedasticity.

Results. The results of the linear regression model were not significant, $F(7,151) = 1.02$, $p = .418$, $R^2 = 0.05$, indicating the project cost, project team member role, and longest project schedule variables did not significantly represent the variation in professional efficacy. No further analysis was warranted as the overall model was not significant. Table 10 summarizes the results of the regression model.

Table 10

Results for Linear Regression with Project Cost, Superintendent, Engineer, Administrator, Consultant, Other Role, and Longest Project Schedule predicting Professional Efficacy

Variable	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	95% C.I.	
						Lower	Upper
(Intercept)	5.04	0.28	0.00	21.26	< .001	4.48	5.60
Project Cost	-0.03	0.08	-0.04	-0.40	.693	-0.18	0.12
Superintendent	-0.24	0.67	-0.03	-0.35	.724	-1.55	1.08
Engineer	-0.53	0.31	-0.14	-1.71	.090	-1.13	0.08
Administrator	-0.71	0.37	-0.15	-1.90	.059	-1.45	0.03
Consultant	-0.18	0.36	-0.04	-0.51	.612	-0.90	0.53
Other Role	-0.37	0.26	-0.12	-1.39	.166	-0.88	0.15
Longest Project Schedule	0.05	0.08	0.05	0.56	.577	-0.11	0.21

Note. Results: $F(7,151) = 1.02, p = .418, R^2 = 0.05$

Applications to Professional Practice

As described earlier, this study focuses on two business problems, the general and specific problem statements. The general business problem is that burnout among project management team members negatively affects performance, progress, and successful completion of projects. The specific business problem is that some business owners, managers, and project leaders do not understand the relationship between project cost, project team member role, project schedule, and project team member burnout. This study did not find a significant relationship between the independent variables and burnout which is important to the project management community. However, the scholarly literature review provided much information regarding burnout from which leaders can learn.

Implications for Social Change

Business leaders should strive to reduce or eliminate burnout. Those leaders that can identify burnout causes and eliminate them should be the target of every organization. As burnout decreases, engagement increases which can contribute to the well-being, social interaction, and personal health of project management team members (Agyemang et al., 2014; Chiu et al., 2015; Pinto et al., 2016). The implication for social change includes the potential to provide project and business leaders with information of burnout predictors they can consider when assigning project teams or when designing programs to reduce the effects of burnout and improve professional efficacy, morale, and organizational profitability (Chen & Yu, 2014).

Recommendations for Action

The findings of this study suggest that the variables tested are not the major contributors to burnout. However, I recommend that project management and business leaders continue to recognize that burnout does indeed exist and is a contributor to organizational inefficiencies that can be avoided. Project management personnel often experience workplace stressors that can lead to burnout syndrome because of their high-demands, and low-resources work environments (Pinto et al., 2014). Leaders that can create a culture offering resources to mitigate job demands will foster an environment conducive to the reduced stress and ultimately burnout.

Sharing this study with the project management community in my global organization will help disseminate the study learnings to a broader community. Another portal to share with the project management community is social media platforms with

project and construction management groups. Finally, I intend to submit this study to the Project Management Institute (PMI), the Association of Project Management (APM), and the International Journal of Project Management.

Recommendations for Further Research

This study included project management personnel from all industries. Focusing on a specific industry such as information technology or the defense industry may produce different results. The potential for results from less stressful industry environments may homogenize the effect of stress on the project management community, skewing the overall results. Understanding the results from different industries may uncover differences between them leading to further research of what causes the differences between them.

A limitation of this study may have been the platform used to gather survey responses. Responses came from individuals that belong to SurveyMonkey Audience and specific project and construction management social media groups. A size limit may exist in the social and paid service participant pools for the geography selected in this study (Marshall et al., 2013), impeding the ability to produce a valid statistical analysis.

I recommend researching to understand differences in the burnout of project management teams related to organization size and the overall responsibilities of the project management personnel. Although this study required the participants to choose a project role on their most significant project, it is possible that practitioners fill more than one role on a project simultaneously. Having responsibility for more than one role could

compound the associated stress levels causing an effect in burnout syndrome for those employees.

Reflections

Following the DBA Doctoral Study Process to conduct a quantitative study of the relationship between project cost, project role, and project schedule provided new insight for me as a student and project management practitioner alike. My 14 years in the project management arena has given me experience working in several project roles on projects of various cost and schedule. During those 14 years, I have witnessed burnout symptoms in others and experienced some level of burnout myself. My personal bias about what causes stress and burnout of project management team members formed from those experiences.

The results of this study have influenced my personal bias. Understanding that job resources have a mitigating effect on work-related stress and potential burnout leads me to consider what resources come into play in my daily work and to those participants in this study that keep demands from inducing long-term stress and eventually burnout. The results of this study are aligned with findings in previous research (Motil, 2015; Pinto et al., 2016). Motil (2015) found no correlation between the predictor variables project duration, project budget, or project role and burnout in the Midwestern United States and Pinto et al. (2014) found no correlation between project cost or project schedule with burnout syndrome in four project-intensive organizations. It is interesting that the findings of those studies align with this research when it is accepted that project

management work is laden with high stress which is a precursor to burnout syndrome (Pinto et al., 2014, 2016).

Conclusion

I used this quantitative correlational study to examine for relationships between project cost, project team member role, project schedule, and project team member burnout in three constructs: cynicism, exhaustion, and professional efficacy. Survey participants came from social media platforms and SurveyMonkey Audience pools. All study participants completed the survey on the SurveyMonkey platform. The survey data was downloaded in SPSS format and analyzed it using SPSS 24 software.

Study data analysis results supported acceptance of the null hypothesis; that there is no statistically significant relationship between the three predictor variables and burnout of project management team members. Although this study discovered no correlation between the predictor variables and burnout of project team members, the problem of burnout remains a constant threat to businesses worldwide. Academic and business organizations should continue studying the causes and effects of burnout to increase engagement and performance. The JD-R model (Bakker & Demerouti, 2007) states that all employees experience demands and resources in their work. When demands are not offset or mitigated by resources, stress results which may lead to burnout. Though this study did not find a correlation between project cost, role, schedule, and burnout, job demands undoubtedly exist in project management work environments. Perhaps the participants in this study work in organizations that have adequate resources in place to mitigate the burnout syndrome effects. A further qualitative study into the programs and

work environments for organizations in the Southern United States may provide insight and understanding of the results of this study.

References

- Aguinis, H. (2014). Revisiting some “established facts” in the field of management. *BRQ Business Research Quarterly*, 17, 2–10. doi:10.1016/j.cede.2013.11.001
- Aguinis, H., & Edwards, J. R. (2014). Methodological wishes for the next decade and how to make wishes come true: Methodological wishes for the next decade. *Journal of Management Studies*, 51, 143–174. doi:10.1111/joms.12058
- Agyemang, C. B., Nyanyofio, J. G., & Gyamfi, G. D. (2014). Job stress, sector of work, and shift-work pattern as correlates of worker health and safety: A study of a manufacturing company in Ghana. *International Journal of Business and Management*, 9(7), 59–69. doi:10.5539/ijbm.v9n7p59
- Ahola, K., Hakanen, J., Perhoniemi, R., & Mutanen, P. (2014). Relationship between burnout and depressive symptoms: A study using the person-centred approach. *Burnout Research*, 1, 29–37. doi:10.1016/j.burn.2014.03.003
- Aij, K. H., Visse, M., & Widdershoven, G. A. M. (2015). Lean leadership: An ethnographic study. *Leadership in Health Services*, 28, 119–134. doi:10.1108/LHS-03-2014-0015
- Akbaş, U. (2017). Examination of the effects of different missing data techniques on item parameters obtained by CTT and IRT. *International Online Journal of Educational Sciences*, 9, 603–616. doi:10.15345/iojes.2017.03.002
- Allen, M., Alleyne, D., Farmer, C., McRae, A., & Turner, C. (2014). A framework for project success. *Journal of Information Technology and Economic Development*, 5(2), 1–17. Retrieved from <http://www.gsmi-ijgb.com>

- An, S.-H., Zhang, Z., & Lee, U.-K. (2013). Correlation analysis between job stress and job satisfaction of building construction field managers. *Journal of the Korea Institute of Building Construction, 13*, 474–481.
doi:10.5345/JKIBC.2013.13.5.474
- Ariani, D. W. (2017). Why am I burnout and engaged? The role of motivation and personality. *Journal of Psychological and Educational Research, 25*(2), 61–89.
Retrieved from <http://socioumane.ro/blog/fasciculapsihologie/http-www-marianjournals-com-jper-issues/numarul-curent/volume-25-issue-2-2017-www-marianjournals-com/>
- Aslam, U., Ilyas, M., Imran, M. K., & Rahman, U.-U.-. (2016). Detrimental effects of cynicism on organizational change: An interactive model of organizational cynicism (a study of employees in public sector organizations). *Journal of Organizational Change Management, 29*, 580–598.
doi:10.1108/JOCM-12-2014-0231
- Bailey, L. F. (2014). The origin and success of qualitative research. *International Journal of Market Research, 56*, 167–184. doi:10.2501/IJMR-2014-013
- Bakker, A. B., & Costa, P. L. (2014). Chronic job burnout and daily functioning: A theoretical analysis. *Burnout Research, 1*, 112–119.
doi:10.1016/j.burn.2014.04.003
- Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology, 22*, 309–328.
doi:10.1108/02683940710733115

- Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and work engagement: The JD–R approach. *Annual Review of Organizational Psychology and Organizational Behavior, 1*, 389–411.
doi:10.1146/annurev-orgpsych-031413-091235
- Beheshtifar, M., & Omidvar, A. R. (2013). Causes to create job burnout in organizations. *International Journal of Academic Research in Business and Social Sciences, 3*(6), 107–113. Retrieved from
http://hrmars.com/index.php/journals/archive_detail/IJARBSS/59
- Bowen, P., Edwards, P., Lingard, H., & Cattell, K. (2014). Occupational stress and job demand, control and support factors among construction project consultants. *International Journal of Project Management, 32*, 1273–1284.
doi:10.1016/j.ijproman.2014.01.008
- Bria, M., Spânu, F., Băban, A., & Dumitrașcu, D. L. (2014). Maslach Burnout Inventory – General Survey: Factorial validity and invariance among Romanian healthcare professionals. *Burnout Research, 1*, 103–111. doi:10.1016/j.burn.2014.09.001
- Carlotto, M. S., Gil-Monte, P. R., & Figueiredo-Ferraz, H. (2015). Factor analysis of the Spanish Burnout Inventory among public administration employees: Factor analysis SBI. *Japanese Psychological Research, 57*(2), 155–165.
doi:10.1111/jpr.12071
- Cerasoli, C. P., Nicklin, J. M., & Ford, M. T. (2014). Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis. *Psychological Bulletin, 140*, 980–1008. doi:10.1037/a0035661

- Chambliss, D. F., & Schutt, R. K. (2016). *Making sense of the social world: Methods of investigation* (5th ed.). Los Angeles, CA: SAGE.
- Chapman, A. L., Johnson, D., & Kilner, K. (2014). Leadership styles used by senior medical leaders: Patterns, influences and implications for leadership development. *Leadership in Health Services, 27*, 283–298. doi:10.1108/LHS-03-2014-0022
- Charoensukmongkol, P., Moqbel, M., & Gutierrez-Wirsching, S. (2016). The role of co-worker and supervisor support on job burnout and job satisfaction. *Journal of Advances in Management Research, 13*, 4–22. doi:10.1108/JAMR-06-2014-0037
- Chen, C.-F., & Yu, T. (2014). Effects of positive vs. negative forces on the burnout-commitment-turnover relationship. *Journal of Service Management, 25*, 388–410. doi:10.1108/JOSM-01-2012-0003
- Chen, Y., Li, Y., Wu, H., & Liang, L. (2014). Data envelopment analysis with missing data: A multiple linear regression analysis approach. *International Journal of Information Technology & Decision Making, 13*, 137–153. doi:10.1142/S0219622014500060
- Cheng, C., Bartram, T., Karimi, L., & Leggat, S. (2016). Transformational leadership and social identity as predictors of team climate, perceived quality of care, burnout and turnover intention among nurses. *Personnel Review, 45*, 1200–1216. doi:10.1108/PR-05-2015-0118
- Chiu, L. Y. L., Stewart, K., Woo, C., Yatham, L. N., & Lam, R. W. (2015). The relationship between burnout and depressive symptoms in patients with depressive disorders. *Journal of Affective Disorders, 172*, 361–366.

doi:10.1016/j.jad.2014.10.029

Chullen, C. L. (2014). How does supervisor burnout affect leader-member exchange? A dyadic perspective. *The International Business & Economics Research Journal*, *13*, 1113–1126. doi:10.19030/iber.v13i5.8777

Consiglio, C., Borgogni, L., Di Tecco, C., & Schaufeli, W. B. (2016). What makes employees engaged with their work? The role of self-efficacy and employee's perceptions of social context over time. *Career Development International*, *21*, 125–143. doi:10.1108/CDI-03-2015-0045

Crede, E., & Borrego, M. (2014). Understanding retention in US graduate programs by student nationality. *Studies in Higher Education*, *39*, 1599–1616. doi:10.1080/03075079.2013.801425

Cunningham, K. B. (2014). Social research design: Framework for integrating philosophical and practical elements. *Nurse Researcher*, *22*, 32–37. doi:10.7748/nr.22.1.32.e1276

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.

Demerouti, E., & Bakker, A. B. (2011). The Job Demands-Resources model: Challenges for future research. *SA Journal of Industrial Psychology*, *37*(2), 1–9. doi:10.4102/sajip.v37i2.974

Demerouti, E. and Bakker, A.B. (2014), Job crafting, in Peeters, M.C.W., de Jonge, J. and Taris, T.W. (Eds), *An introduction to contemporary work psychology*, Wiley, Blackwell, pp. 414–433.

- El-Masri, M. M. (2017). Probability sampling. *Canadian Nurse*, *113*(2), 26. Retrieved from <https://www.canadian-nurse.com/sections/research>
- Elzamly, A., & Hussin, B. (2014). Managing software project risks (analysis phase) with proposed fuzzy regression analysis modelling techniques with fuzzy concepts. *CIT. Journal of Computing and Information Technology*, *22*, 131–144. doi:10.14355/ijics.2014.0302.02
- Enshassi, A., El-Rayyes, Y., & Alkilani, S. (2015). Job stress, job burnout and safety performance in the Palestinian construction industry. *Journal of Financial Management of Property and Construction*, *20*, 170–187. doi:10.1108/JFMPC-01-2015-0004
- Etikan, I. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, *5*, 1–4. doi:10.11648/j.ajtas.20160501.11
- Eyyam, R., & Yaratan, H. S. (2014). Impact of use of technology in mathematics lessons on student achievement and attitudes. *Social Behavior and Personality: An International Journal*, *42*, 31–42. doi:10.2224/sbp.2014.42.0.S31
- Faul, F., Erdfelder, E., Lang, A.-G. & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*, 175–191. doi:10.3758/BF03193146
- Feldt, T., Rantanen, J., Hyvönen, K., Mäkikangas, A., Huhtala, M., Pihlajasaari, P., & Kinnunen, U. (2014). The 9-item Bergen Burnout Inventory: Factorial validity across organizations and measurements of longitudinal data. *Industrial Health*,

52, 102–112. doi:10.2486/indhealth.2013-0059

- Fong, T. C. T., Ho, R. T. H., & Ng, S. M. (2014). Psychometric properties of the Copenhagen Burnout Inventory-Chinese version. *The Journal of Psychology, 148*, 255–266. doi:10.1080/00223980.2013.781498
- Freudenberger, H. J. (1974). Staff burn-out. *Journal of Social Issues, 30*, 159–165. doi:10.1111/j.1540-4560.1974.tb00706.x
- Fu, F., & Zhang, T. (2016). A new model for solving time-cost-quality trade-off problems in construction. *PLOS ONE, 11*(12), 1–15. doi:10.1371/journal.pone.0167142
- Galvin, T., Gibbs, M., Sullivan, J., & Williams, C. (2014). Leadership competencies of project managers: An empirical study of emotional, intellectual, and managerial dimensions. *Journal of Economic Development, Management, IT, Finance, and Marketing, 6*(1), 35–60. Retrieved from <http://www.gsmi-ijgb.com/Pages/Journals.aspx>
- García, C. B., García, J., López Martín, M. M., & Salmerón, R. (2015). Collinearity: Revisiting the variance inflation factor in ridge regression. *Journal of Applied Statistics, 4*, 648–661. doi:10.1080/02664763.2014.980789
- Gaskin, C. J., & Happell, B. (2014). Power, effects, confidence, and significance: An investigation of statistical practices in nursing research. *International Journal of Nursing Studies, 51*, 795–806. doi:10.1016/j.ijnurstu.2013.09.014
- George, D., & Mallery, P. (2017). *IBM SPSS statistics 23 step by step: a simple guide and reference* (14th ed.). Boston: Pearson Education.

- Gibbs, N. M., & Weightman, W. M. (2014). An audit of the statistical validity of conclusions of clinical superiority in anaesthesia journals. *Anaesthesia and Intensive Care, 42*, 599–607. Retrieved from <http://www.aaic.net.au>
- Gillespie, N., Dietz, G., & Lockey, S. (2014). Organizational reintegration and trust repair after an integrity violation: A case study. *Business Ethics Quarterly, 24*, 371–410. doi:10.5840/beq2014437
- Green, S. B., & Salkind, N. J. (2017). *Using SPSS for Windows and Macintosh: analyzing and understanding data* (8th ed.). Hoboken: Pearson.
- Guest, D. (2014). Employee engagement: A sceptical analysis. *Journal of Organizational Effectiveness: People and Performance, 1*, 141–156. doi:10.1108/JOEPP-04-2014-0017
- Güntert, S. T. (2015). The impact of work design, autonomy support, and strategy on employee outcomes: A differentiated perspective on self-determination at work. *Motivation and Emotion, 39*, 74–87. doi:10.1007/s11031-014-9412-7
- Heyvaert, M., & Onghena, P. (2014). Analysis of single-case data: Randomisation tests for measures of effect size. *Neuropsychological Rehabilitation, 24*, 507–527. doi:10.1080/09602011.2013.818564
- Hopkins, L., & Ferguson, K. E. (2014). Looking forward: The role of multiple regression in family business research. *Journal of Family Business Strategy, 5*, 52–62. doi:10.1016/j.jfbs.2014.01.008
- Hu, Q., Schaufeli, W. B., & Taris, T. W. (2016). Extending the job demands-resources model with *guanxi* exchange. *Journal of Managerial Psychology, 31*, 127–140.

doi:10.1108/JMP-04-2013-0102

Hunsaker, S., Chen, H.-C., Maughan, D., & Heaston, S. (2015). Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses. *Journal of Nursing Scholarship, 47*, 186–194.

doi:10.1111/jnu.12122

Hurley, J. S. (2017). *The one habit* [Kindle DX version]. Retrieved from Amazon.com.

Hyett, N., Kenny, A., & Dickson-Swift, V. (2014). Methodology or method? A critical review of qualitative case study reports. *International Journal of Qualitative Studies on Health and Well-Being, 9*, 1–11. doi:10.3402/qhw.v9.23606

Ibrahim, R. Z. A. R., & Ohtsuka, K. (2014). Review of the job demand-control and job demand-control-support models: Elusive moderating predictor effects and cultural implications. *Southeast Asia Psychology Journal, 1*, 10–21. Retrieved from <http://www.cseap.edu.my/sapj/index.php/journal/singleJournal/2>

Judkins-Cohn, T. M., Kielwasser-Withrow, K., Owen, M., & Ward, J. (2014). Ethical principles of informed consent: Exploring nurses' dual role of care provider and researcher. *The Journal of Continuing Education in Nursing, 45*, 35–42.

doi:10.3928/00220124-20131223-03

Jupiter, D. C. (2017). Assumptions of statistical tests: What lies beneath. *The Journal of Foot and Ankle Surgery, 56*, 910–913. doi:10.1053/j.jfas.2017.05.022

Kahlke, R. M. (2014). Generic qualitative approaches: Pitfalls and benefits of methodological mixology. *International Journal of Qualitative Methods, 13*, 37–52. doi:10.1177/160940691401300119

- Karanika-Murray, M., Duncan, N., Pontes, H. M., & Griffiths, M. D. (2015). Organizational identification, work engagement, and job satisfaction. *Journal of Managerial Psychology, 30*, 1019–1033. doi:10.1108/JMP-11-2013-0359
- Khan, M. A. (2014). Organizational cynicism and employee turnover intention: Evidence from banking sector in Pakistan. *Pakistan Journal of Commerce & Social Sciences, 8*, 30–41. Retrieved from <http://jespk.net/publications.php>
- Khan, S. N. (2014). Qualitative Research Method: Grounded Theory. *International Journal of Business and Management, 9*, 224–233. doi:10.5539/ijbm.v9n11p224
- Kratochwill, T. R., & Levin, J. R. (2014). Meta- and statistical analysis of single-case intervention research data: Quantitative gifts and a wish list. *Journal of School Psychology, 52*, 231–235. doi:10.1016/j.jsp.2014.01.003
- Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work and Stress, 19*, 192–207. doi:10.1080/02678370500297720
- Kundu, S. C., & Gahlawat, N. (2016). Effects of employee retention practices on perceived firm and innovation performance. *International Journal of Innovation and Learning, 19*, 25–43. doi:10.1504/IJIL.2016.073287
- Kundu, S. C., & Gahlawat, N. (2016). High performance work systems and employees' intention to leave: Exploring the mediating role of employee outcomes. *Management Research Review, 39*, 1587–1615. doi:10.1108/MRR-04-2015-0088
- Kundu, S. C., & Lata, K. (2017). Effects of supportive work environment on employee retention: Mediating role of organizational engagement. *International Journal of*

- Organizational Analysis*, 25, 703–722. doi:10.1108/IJOA-12-2016-1100
- Kuvaas, B., Buch, R., Weibel, A., Dysvik, A., & Nerstad, C. G. L. (2017). Do intrinsic and extrinsic motivation relate differently to employee outcomes? *Journal of Economic Psychology*, 61, 244–258. doi:10.1016/j.joep.2017.05.004
- Lancaster, S., & Di Milia, L. (2015). Developing a supportive learning environment in a newly formed organisation. *Journal of Workplace Learning*, 27, 442–456. doi:10.1108/JWL-08-2014-0061
- Lancsar, E., & Swait, J. (2014). Reconceptualising the external validity of discrete choice experiments. *PharmacoEconomics*, 32, 951–965. doi:10.1007/s40273-014-0181-7
- Lazar, M., Mouzdahir, A., Badia, M., & Zahouily, M. (2014). Artemisinin analogues selection in linear and non-linear QSAR. *Journal of Pharmacy Research*, 8, 118–122. Retrieved from http://jprsolutions.info/view_journal_new.php?journal_id=1
- Liegman, A. A. (2015). *An interconnected perspective of organizational change cynicism (OCC)* (Doctoral dissertation). (UMI No. 3716793)
- Lundkvist, E., Stenling, A., Gustafsson, H., & Hassmén, P. (2014). How to measure coach burnout: An evaluation of three burnout measures. *Measurement in Physical Education and Exercise Science*, 18, 209–226. doi:10.1080/1091367X.2014.925455
- Luo, H., Yang, H., Xu, X., Yun, L., Chen, R., Chen, Y., ... others. (2016). Relationship between occupational stress and job burnout among rural-to-urban migrant workers in Dongguan, China: A cross-sectional study. *BMJ Open*, 6(8), 1–8. doi:10.1136/bmjopen-2016-012597

- Ma Prieto, I., & Pilar Pérez-Santana, M. (2014). Managing innovative work behavior: The role of human resource practices. *Personnel Review*, *43*, 184–208.
doi:10.1108/PR-11-2012-0199
- Maden-Eyiusta, C. (2016). Job resources, engagement, and proactivity: a moderated mediation model. *Journal of Managerial Psychology*, *31*, 1234–1250.
doi:10.1108/JMP-04-2015-0159
- Manolov, R. (2017). Reporting single-case design studies: Advice in relation to the designs' methodological and analytical peculiarities. *Anuario de Psicología*, *47*, 45–55. doi:10.1016/j.anpsic.2017.05.004
- Marshall, B., Cardon, P., Poddar, A., & Fontenot, R. (2013). Does sample size matter in qualitative research?: A review of qualitative interviews in is research. *Journal of 88 Computer Information Systems*, *54*(1), 11–22.
doi:10.1080/08874417.2013.11645667
- Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Occupational Behavior*, *2*, 99–113. doi:10.1002/job4030020205
- Maslach, C., & Jackson, S. E., & Leiter, M. P. (1996). *Maslach Burnout Inventory*. (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: Recent research and its implications for psychiatry. *World Psychiatry*, *15*, 103–111.
doi:10.1002/wps.20311
- Maslach Burnout Inventory. (2017). Retrieved November 22, 2017, from <http://www.mindgarden.com/117-maslach-burnout-inventory>

- Mayoh, J., & Onwuegbuzie, A. J. (2015). Toward a conceptualization of mixed methods phenomenological research. *Journal of Mixed Methods Research, 9*, 91–107.
doi:10.1177/1558689813505358
- McAlevey, L. G., & Stent, A. F. (2018). Kurtosis: A forgotten moment. *International Journal of Mathematical Education in Science and Technology, 49*, 120–130.
doi:10.1080/0020739X.2017.1357848
- McGregor, A., Magee, C. A., Caputi, P., & Iverson, D. (2016). A job demands-resources approach to presenteeism. *Career Development International, 21*, 402–418.
doi:10.1108/CDI-01-2016-0002
- McLaughlin, J. E., Bush, A. A., & Zeeman, J. M. (2016). Mixed methods: Expanding research methodologies in pharmacy education. *Currents in Pharmacy Teaching and Learning, 8*, 715–721. doi:10.1016/j.cptl.2016.06.015
- Mészáros, V., Ádám, S., Szabo, M., Szigeti, R., & Urbán, R. (2014). The Bifactor model of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS)-An alternative measurement model of burnout: The bifactor model of the MBI-HSS. *Stress and Health, 30*, 82–88. doi:10.1002/smi.2481
- Mir, F. A., & Pinnington, A. H. (2014). Exploring the value of project management: Linking project management performance and project success. *International Journal of Project Management, 32*, 202–217.
doi:10.1016/j.ijproman.2013.05.012
- Moncada, S., Utzet, M., Molinero, E., Llorens, C., Moreno, N., Galtés, A., & Navarro, A. (2014). The Copenhagen psychosocial questionnaire II (COPSOQ II) in Spain-A

- tool for psychosocial risk assessment at the workplace: Copenhagen Psychosocial Questionnaire II in Spain. *American Journal of Industrial Medicine*, 57, 97–107. doi:10.1002/ajim.22238
- Motil, M. M. (2015). *Project duration, budget, individual role, and burnout among construction managers* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Thesis database. (UMI No. 3705625)
- Nayak, P., Mukherjee, A. K., Pandit, E., & Pradhan, S. K. (2018). Application of statistical tools for data analysis and interpretation in rice plant pathology. *Rice Science*, 25, 1–18. doi:10.1016/j.rsci.2017.07.001
- Neall, A. M., & Tuckey, M. R. (2014). A methodological review of research on the antecedents and consequences of workplace harassment. *Journal of Occupational and Organizational Psychology*, 87, 225–257. doi:10.1111/joop.12059
- Newton, C., & Teo, S. (2014). Identification and occupational stress: A stress-buffering perspective. *Human Resource Management*, 53, 89–113. doi:10.1002/hrm.21598
- Nutov, L., & Hazzan, O. (2014). An organizational engagement model as a management tool for high school principals. *Journal of Educational Administration*, 52, 469–486. doi:10.1108/JEA-12-2012-0132
- Osborne, J., & Waters, E. (2002). Four assumptions of multiple regression that researchers should always test. *Practical assessment, research & evaluation*, 8, 1–9. Retrieved from <http://pareonline.net/>
- Pandya, K. D. (2014). The key competencies of project leader beyond the essential technical capabilities. *IUP Journal of Knowledge Management*, 12, 39–48.

Retrieved from http://www.iupindia.in/Knowledge_Management.asp

- Pettijohn, C., Schaefer, A., & Burnett, M. (2014). Salesperson performance: Exploring the roles of role ambiguity, autonomy, and self-efficacy. *Academy of Marketing Studies Journal, 18*(1), 99–111. Retrieved from <https://www.abacademies.org/journals/academy-of-marketing-studies-journal-home.html>
- Pham, L. H., & Hadikusumo, H. (2014). Schedule delays in engineering, procurement, and construction petrochemical projects in Vietnam. *International Journal of Energy Sector Management, 8*, 3–26. doi:10.1108/IJESM-06-2013-0009
- Pinto, J. K., Dawood, S., & Pinto, M. B. (2014). Project management and burnout: Implications of the Demand-Control-Support model on project-based work. *International Journal of Project Management, 32*, 578–589. doi:10.1016/j.ijproman.2013.09.003
- Pinto, J. K., Patanakul, P., & Pinto, M. B. (2016). Project personnel, job demands, and workplace burnout: The differential effects of job title and project type. *IEEE Transactions on Engineering Management, 63*, 91–100. doi:10.1109/TEM.2015.2509163
- Pirog, M. A. (2014). Internal versus external validity: Where are policy analysts going?: Point/Counterpoint. *Journal of Policy Analysis and Management, 33*, 548–550. doi:10.1002/pam.21753
- Poile, C. (2017). Why would I help my coworker? Exploring asymmetric task dependence and the self-determination theory internalization process. *Journal of*

- Experimental Psychology: Applied*, 23, 354–368. doi:10.1037/xap0000128
- Qiao, H., & Schaufeli, W. B. (2011). The convergent validity of four burnout measures in a Chinese sample: A confirmatory factor-analytic approach. *Applied Psychology: An International Review*, 60, 87–111. doi:10.1111/j.1464-0597.2010.00428.x
- Rahim, A., & Cosby, D. M. (2016). A model of workplace incivility, job burnout, turnover intentions, and job performance. *Journal of Management Development*, 35, 1255–1265. doi:10.1108/JMD-09-2015-0138
- Rana, S., Ardichvili, A., & Tkachenko, O. (2014). A theoretical model of the antecedents and outcomes of employee engagement: Dubin's method. *Journal of Workplace Learning*, 26, 249–266. doi:10.1108/JWL-09-2013-0063
- Rattrie, L., & Kittler, M. (2014). The job demands-resources model and the international work context – a systematic review. *Journal of Global Mobility: The Home of Expatriate Management Research*, 2, 260–279. doi:10.1108/JGM-06-2014-0018
- Ritchie, J., & Lewis, J. (Eds.). (2014). *Qualitative research practice: A guide for social science students and researchers* (2nd. ed.). London: SAGE.
- Roelen, C. A. M., van Hoffen, M. F. A., Groothoff, J. W., de Bruin, J., Schaufeli, W. B., & van Rhenen, W. (2015). Can the Maslach Burnout Inventory and Utrecht Work Engagement Scale be used to screen for risk of long-term sickness absence? *International Archives of Occupational and Environmental Health*, 88, 467–475. doi:10.1007/s00420-014-0981-2
- Ronau, R. N., Rakes, C. R., Bush, S. B., Driskell, S. O., Niess, M. L., & Pugalee, D. K. (2014). A survey of mathematics education technology dissertation scope and

- quality: 1968–2009. *American Educational Research Journal*, 51, 974–1006.
doi:10.3102/0002831214531813
- Rubin, A., & Babbie, E. R. (2016). *Essential research methods for social work* (4th ed.). Boston, MA: Cengage Learning.
- Saari, T., Melin, H., Balabanova, E., & Efendiev, A. (2017). The job demands and resources as antecedents of work engagement: Comparative research on Finland and Russia. *Baltic Journal of Management*, 12, 240–254. doi:10.1108/BJM-05-2016-0112
- Salem, R., & Abdo, A. (2016). Fixing rules for data cleaning based on conditional functional dependency. *Future Computing and Informatics Journal*, 1, 10–26.
doi:10.1016/j.fcij.2017.03.002
- Sanjari, M., Bahramnezhad, F., Fomani, F. K., Shoghi, M., & Cheraghi, M. A. (2014). Ethical challenges of researchers in qualitative studies: The necessity to develop a specific guideline. *Journal of Medical Ethics and History of Medicine*, 7, 1–6.
Retrieved from <http://jmehm.tums.ac.ir/index.php/jmehm/article/view/106/96>
- Santos, A., Mustafa, M. J., & Gwi, T. C. (2015). Trait emotional intelligence, emotional labour, and burnout among Malaysian HR professionals. *Management Research Review*, 38, 67–88. doi:10.1108/MRR-06-2013-0143
- Sarros, J. C., Luca, E., Densten, I., & C. Santora, J. (2014). Leaders and their use of motivating language. *Leadership & Organization Development Journal*, 35, 226–240. doi:10.1108/LODJ-06-2012-0073
- Sarti, D. (2014). Job resources as antecedents of engagement at work: Evidence from a

- long-term care setting. *Human Resource Development Quarterly*, 25, 213–237.
doi:10.1002/hrdq.21189
- Schalock, R. L., Gomez, L. E., Verdugo, M. A., & Claes, C. (2017). Evidence and evidence-based practices: Are we there yet? *Intellectual and Developmental Disabilities*, 55, 112–119. doi:10.1352/1934-9556-55.2.112
- Schaufeli, W. B. (2015). Engaging leadership in the job demands-resources model. *Career Development International*, 20, 446–463. doi:10.1108/CDI-02-2015-0025
- Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the job demands-resources model: Implications for improving work and health. In G. F. Bauer & O. Hämmig, *Bridging Occupational, Organizational and Public Health* (pp. 43–68). Dordrecht: Springer Netherlands. doi:10.1007/978-94-007-5640-3_4
- Serier, M., Benamara, N., Megueni, A., & Refassi, K. (2015). Modeling of cracked beams by the experimental design method. *Latin American Journal of Solids & Structures*, 12, 1641–1652. doi:10.1590/1679-78251403
- Shirom, A. (2005). Reflections on the study of burnout. *Work and Stress*, 19, 263–270. doi:10.1080/02678370500376649
- Sihoe, A. D. L. (2015). Rationales for an accurate sample size evaluation. *Journal of Thoracic Disease*, 7, 531–536. doi:10.3978/j.issn.2072-1439.2015.10.33
- Simha, A., F. Elloy, D. F., & Huang, H.-C. (2014). The moderated relationship between job burnout and organizational cynicism. *Management Decision*, 52, 504–482. doi:10.1108/MD-08-2013-0422
- Solanki, R. S., & Singh, H. P. (2015). Efficient classes of estimators in stratified random

- sampling. *Statistical Papers*, 56, 83–103. doi:10.1007/s00362-013-0567-1
- Spinelli, W. M., Fernstrom, K. M., Galos, D. L., & Britt, H. R. (2016). Extending our understanding of burnout and its associated factors: Providers and staff in primary care clinics. *Evaluation & the Health Professions*, 39, 282–298. doi:10.1177/0163278716637900
- Steyn, C., & de Klerk, J. J. (2015). Serving up the self: Role identity and burnout in client service environments. *SA Journal of Industrial Psychology*, 41(1), 1–12. doi:10.4102/sajip.v41i1.1279
- SurveyMonkey Audience. (2014). *SurveyMonkey audience*. Retrieved from <http://help.surveymonkey.com/>
- Tai, L. (2015). The impact of corporate governance on the efficiency and financial performance of GCC national banks. *Middle East Journal of Business*, 10(1), 12–16. doi:10.5742/MEJB.2015.92594
- Teoh, K. R.-H., Coyne, I., Devonish, D., Leather, P., & Zarola, A. (2016). The interaction between supportive and unsupportive manager behaviors on employee work attitudes. *Personnel Review*, 45, 1386–1402. doi:10.1108/PR-05-2015-0136
- Trafimow, D. (2014). Considering quantitative and qualitative issues together. *Qualitative Research in Psychology*, 11, 15–24. doi:10.1080/14780887.2012.743202
- Trépanier, S. G., Fernet, C., & Austin, S. (2013). The moderating role of autonomous motivation in the job demands-strain relation: A two sample study. *Motivation and Emotion*, 37, 93–105. doi:10.1007/s11031-012-9290-9

- Turner, T. L., Balmer, D. F., & Coverdale, J. H. (2013). Methodologies and study designs relevant to medical education research. *International Review of Psychiatry, 25*, 301–310. doi:10.3109/09540261.2013.790310
- United States Department of Health & Human Services. (2015). Belmont Report 1979. Retrieved from <http://www.hhs.gov/ohrp/humansubjects/guidance/belmont/html>
- Upadyaya, K., & Salmela-Aro, K. (2015). Development of early vocational behavior: Parallel associations between career engagement and satisfaction. *Journal of Vocational Behavior, 90*, 66–74. doi:10.1016/j.jvb.2015.07.008
- Upadyaya, K., Vartiainen, M., & Salmela-Aro, K. (2016). From job demands and resources to work engagement, burnout, life satisfaction, depressive symptoms, and occupational health. *Burnout Research, 3*, 101–108. doi:10.1016/j.burn.2016.10.001
- U.S. Census Bureau. (2016). *Census regions of the United States*. Retrieved from www.census.gov
- U.S. Department of Labor, Bureau of Labor Statistics. (2017). *Occupational outlook handbook, 2014–15 edition, construction managers*. Retrieved from <http://www.bls.gov/ooh/management/construction-managers.htm>
- Van Yperen, N. W., Wörtler, B., & De Jonge, K. M. (2016). Workers' intrinsic work motivation when job demands are high: The role of need for autonomy and perceived opportunity for blended working. *Computers in Human Behavior, 60*, 179–184. doi:10.1016/j.chb.2016.02.068
- Van den Broeck, A., Ferris, D. L., Chang, C. H., & Rosen, C. C. (2016). A review of self-

- determination theory's basic psychological needs at work. *Journal of Management*, 42(5), 1195–1229. doi:10.1177/0149206316632058
- Vaske, J. J., Beaman, J., & Sponarski, C. C. (2017). Rethinking internal consistency in Cronbach's alpha. *Leisure Sciences*, 39, 163–173.
doi:10.1080/01490400.2015.1127189
- Venkatesh, V., Brown, S. A., & Bala, H. (2013). Bridging the qualitative-quantitative divide: Guidelines for conducting mixed methods research in information systems. *MIS Quarterly*, 37, 21–54. doi:10.25300/misq/2013/37.1.02
- Wang, Y., Huang, J., & You, X. (2016). Personal resources influence job demands, resources, and burnout: A one-year, three-wave longitudinal study. *Social Behavior and Personality: An International Journal*, 44, 247–258.
doi:10.2224/sbp.2016.44.2.247
- Wao, H., Mhaskar, R., Kumar, A., Miladinovic, B., Guterbock, T., Hozo, I., & Djulbegovic, B. (2014). Uncertainty about effects is a key factor influencing institutional review boards' approval of clinical studies. *Annals of Epidemiology*, 24, 734–740. doi:10.1016/j.annepidem.2014.06.100
- Westermann, C., Kozak, A., Harling, M., & Nienhaus, A. (2014). Burnout intervention studies for inpatient elderly care nursing staff: Systematic literature review. *International Journal of Nursing Studies*, 51, 63–71.
doi:10.1016/j.ijnurstu.2012.12.001
- Wingerden, J. van, Bakker, A. B., & Derks, D. (2016). A test of a job demands-resources intervention. *Journal of Managerial Psychology*, 31, 686–701. doi:10.1108/JMP-

03-2014-0086

Wysocki, R. K. (2014). *Effective project management: traditional, agile, extreme, seventh edition* (7th ed.). Indianapolis, IN: John Wiley and Sons.

Yang, Y., & Mathew, T. (2018). The simultaneous assessment of normality and homoscedasticity in linear fixed effects models. *Journal of Statistical Theory and Practice*, *12*, 66–81. doi:10.1080/15598608.2017.1320243

Yao, Y.-H., Fan, Y.-Y., Guo, Y.-X., & Li, Y. (2014). Leadership, work stress, and employee behavior. *Chinese Management Studies*, *8*, 109–126. doi:10.1108/CMS-04-2014-0089

Yasin, T., & Khalid, S. (2015). Organizational cynicism, work related quality of life and organizational commitment in employees. *Pakistan Journal of Commerce & Social Sciences*, *9*, 568–582. Retrieved from <http://www.jespk.net/publications/251.pdf>

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Thousand Oaks, CA: SAGE.

Appendix A: Reference Statistics

Table A1

Reference Statistics

Source	Quantity	Percentage of total references
Current source (2014-2018)	135	88.24%
Not current (≤ 2013)	18	11.76%
Peer-reviewed	144	94.12%
Not peer-reviewed	9	5.88%
Journals	139	90.85%
Books	9	5.88%
Doctoral dissertations	02	1.31%
Government information	03	1.96%
Total	153	100%

Appendix B: National Institute of Health Certification



Appendix C: Survey Questions

1. Which region of the United States do you work in?
 - a. Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont
 - b. Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin
 - c. South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia
 - d. West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming
2. What industry do you work in?
 - a. Manufacturing
 - b. Technology
 - c. Construction
 - d. Education
 - e. Government
 - f. Other
3. What is your gender?
 - a. Female
 - b. Male
4. What is your age?
 - a. 18-24
 - b. 25-34
 - c. 35-44
 - d. 45-54
 - e. 55-64
 - f. 65-74
 - g. 75 or older
5. What is your highest education level completed?
 - a. GED
 - b. High school
 - c. Some college
 - d. Associates degree
 - e. Bachelor's degree
 - f. Some graduate school
 - g. Master's Degree
 - h. Doctoral degree
6. What size is your organization – salaried personnel
 - a. 0-50
 - b. 51-99
 - c. 100-199

- d. 200-499
 - e. 500 or more
7. What is your project role?
- a. Project manager
 - b. Project superintendent
 - c. Project engineer
 - d. Project administrator/clerk
 - e. Design or management consultant
 - f. Other team member
8. What is the largest project you are currently assigned to?
- a. Between \$0-499 thousand
 - b. Between \$0.5-1 million
 - c. Between \$1-10 million
 - d. Between \$10-100 million
 - e. More than \$100 million
9. What is the longest project schedule you are currently assigned to?
- a. < 3 months
 - b. Between 3 months and 6 months
 - c. Between 6 months and 1 year
 - d. Between 1 and 2 years
 - e. More than 2 years

The Maslach Burnout Inventory (MBI) 16 questions will follow next. I am not permitted to reproduce the MBI questions here.

Appendix D: Permission to Use the MBI-GS

For use by Alan Buntschuh only. Received from Mind Garden, Inc. on November 29, 2017



To whom it may concern,

The above-named person has made a license purchase from Mind Garden, Inc. and has permission to administer the following copyrighted instrument up to the quantity purchased:

Maslach Burnout Inventory Forms: Human Services Survey, Human Services Survey for Medical Personnel, Educators Survey, General Survey, or General Survey for Students.

Three sample items from a single form of this instrument may be reproduced for inclusion in a thesis or dissertation. An entire form or instrument may not be included or reproduced at any time in any published material. Citation of the instrument must include the applicable copyright statement listed below.

Copyright statements:

MBI - Human Services Survey - MBI-HSS: Copyright ©1981 Christina Maslach & Susan E. Jackson. All rights reserved in all media. Published by Mind Garden, Inc., www.mindgarden.com

MBI - Human Services Survey for Medical Personnel - MBI-HSS (MP): Copyright ©1981, 2016 by Christina Maslach & Susan E. Jackson. All rights reserved in all media. Published by Mind Garden, Inc., www.mindgarden.com

MBI - Educators Survey - MBI-ES: Copyright ©1986 Christina Maslach, Susan E. Jackson & Richard L. Schwab. All rights reserved in all media. Published by Mind Garden, Inc., www.mindgarden.com

MBI - General Survey - MBI-GS: Copyright ©1995 Wilmar B. Schaufeli, Michael P. Leiter, Christina Maslach & Susan E. Jackson. All rights reserved in all media. Published by Mind Garden, Inc., www.mindgarden.com

MBI - General Survey for Students - MBI-GS (S): Copyright ©1995, 2016 Wilmar B. Schaufeli, Michael P. Leiter, Christina Maslach & Susan E. Jackson. All rights reserved in all media. Published by Mind Garden, Inc., www.mindgarden.com

Sincerely,

Robert Most
Mind Garden, Inc.
www.mindgarden.com