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Abstract

The current study examined the effects of planning errors and organizational error management culture on occupational self-efficacy. A total of 223 participants were randomly assigned to one of four vignettes where they were asked to imagine themselves completing a project at a fictitious company. The vignettes were constructed using a 2 (planning error: present, not present) x 2 (error management culture: high, low) between-subjects factorial design. In the planning error condition, the participant was described as making a planning error when completing the project, whereas in the no planning error condition, no error was made, and the project was completed on time. In the high error management culture condition, the company was described as being open to errors and emphasized communication and learning from errors, whereas in the low error management culture condition, the company was described as not being open to errors and penalized the participant if an error was made. After reading the scenario, the participants rated their level of occupational self-efficacy. Results showed a significant main effect of planning errors on occupational self-efficacy, such that occupational self-efficacy was lower in the planning errors condition than in the no planning errors condition. Future research should continue to explore additional consequences of planning errors and other errors in the workplace. Moreover, future research should further examine ways that organizations can reduce errors in their employees and ways to reduce the negative effects of the errors when they do occur.
Chapter I

Review of the Literature

Failing to complete a task or project on time is common in organizations. One reason why people may not complete projects on time is because they experience planning errors. Organizations must do their best to minimize errors, but research has shown that planning errors may inevitably occur for a variety of tasks and projects (Buehler, Griffin, & Ross, 1994; The Standish Group International, Incorporated, 2013). Organizations should be aware of the negative effect project planning errors may have on employees. There is also value in knowing what organizations can do to both reduce the negative consequences of errors and highlight the positive consequences. Although research has extensively explored the antecedents to planning errors (see Halkjelsvik & Jorgensen, 2012, for a review) there is limited research on the consequences of planning errors brought about by the planning fallacy. Additionally, little research has examined the role of workplace culture in dealing with planning errors.

The primary goal of the current research was to investigate the relationship between planning errors and occupational self-efficacy. Self-efficacy refers to one’s belief in his or her abilities (Bandura, 1986). A person’s self-belief is important for performance expectations (Vancouver & Kendall, 2006) and is influenced by successes and failures (Bandura, 1986). It is for these reasons that planning errors seem to be a practical and applicable issue to study in relation to self-efficacy. Occupational self-
efficacy applies the concepts of self-efficacy to the workplace and is defined as an employee’s belief in his or her ability to execute behavior relevant to the job (Schyns & von Collani, 2002). This organizational focus adds a level of applicability to the research implications. Due to the nature of the research, the construct of organizational error management culture seems appropriate to address the effects of planning errors. Error management culture acknowledges the presence of errors and emphasizes the learning opportunities that errors offer (van Dyck, Frese, Baer & Sonnentag, 2005). Therefore, this study also examined the effect of organizational culture on the relation between planning errors and occupational self-efficacy.

The Planning Fallacy and Planning Errors

The term “planning fallacy” was originally coined by Kahneman and Tversky (1979) and states that we are likely to underestimate the time needed to complete a project. The problem with making accurate predictions is we rely too heavily on singular information, the data associated with the current situation, and do not rely enough on distributional information, the outcomes of similar situations, even when this distributional information is readily available (Kahneman & Tversky, 1973). The issue with this “internal approach” (Kahneman & Tversky, 1979, p. 318) is we often underestimate the probability of situational hurdles or do not even take them into consideration (Bar-Hillel, 1973). This is because people overestimate the likelihood that their project or task will go exactly as planned or they believe events that occur are more likely to help than harm (Cantril, 1938). There are several ways the future can unfold, and not accurately anticipating variation from the original plan may lead to an optimistic bias of prediction (Kahneman & Tversky, 1973).
This optimistic bias holds true, regardless of the amount of information available. If information on the situation is narrow and/or incomplete, the lack of quality information leads to inaccurate interpretations of data and an overconfidence bias in estimations (Kahneman & Tversky, 1973). Alternatively, the tendency to believe a project will progress as planned remains, even when it is known that similar situations have experienced planning failure in the past (Kahneman & Tversky, 1973). Many reasons have been cited as to why people are unsuccessful at transferring information from past experiences to help guide their present planning decisions. The major reason cited is the difficulty of seeing direct similarities between situations, making it challenging to compare them (Kahneman & Tversky, 1973). Another reason is that people compare their current situation to nonequivalent situations, resulting in the utilization of inaccurate reference information (Kahneman & Tversky, 1979). Finally, it may be a result of the way individuals interpret the causes of planning errors in previous situations. For example, if individuals attribute errors in previous situations to variables in which they do not perceive as relevant to their current situation, this distributional information is often discounted (Jones & Davis, 1965).

It has been shown that these planning errors are extensive and apply to several situations. For example, The Standish Group (2013) reported that 43% of projects in their study of just under 50,000 projects were either late or over budget, and an additional 18% were never completed. Moreover, Buehler et al. (1994) surveyed students and found approximately two-thirds of the students' projects overran their projected completion date. The planning fallacy has been extensively documented in both large and small projects. In regards to small projects and daily activities, the planning fallacy has been
replicated in tasks such as software development (Anda et al., 2002; Jenkins et al., 1984; Molokken-Ostvold et al., 2004), computer desk assembly (Sanna et al., 2005), and formatting documents (Kruger & Evans, 2004), among many others (see Halkjelsvik & Jorgensen, 2012, for a review). When planning errors exist during several minor stages of a project, the compounded effect can be substantial. Several examples of this exist in modern history including the construction of the Sydney Opera House and the Wembley Stadium in London, which exceeded the originally planned completion dates by 9 years (Hall, 1982) and 5 years (Vermeulen, 2011), respectively, and were more than $90 million (Hall, 1982) and $450 million (Vermeulen, 2011) over budget, respectively. Planning errors can occur at any stage of a project and the more errors made, the greater the costs may be.

The financial, social, and personal costs of making planning errors are great, but research has shown that even when the penalty for failure is great, the fallacy persists (Kahneman & Tversky, 1973). Planning errors lead to inaccurate allocations of time and resources, as well as inaccurate forecasting (Lovallo & Kahneman, 2003). Employees may be asked to work overtime to meet deadlines and may experience demoralization when projects are dragged on past the expected completion date or never finished at all. Opportunities to start new projects are also lost when planning errors occur. Despite being aware of the commonality and inevitability of planning errors, little research has explored how employees respond to errors of this kind or the negative consequences that may result (Tjosvold, Yu, & Hui, 2004). Reduced occupational self-efficacy may be a negative consequence of the planning fallacy. Extended research on these topics is needed to develop a more comprehensive understanding of planning error consequences.
Occupational Self-Efficacy

Original conceptualization. Bandura (1977) described self-efficacy as a person’s belief in his or her ability to produce a certain outcome or accomplish a task. Said another way, it is self-belief in the capability to adapt and utilize resources to accomplish goals and tasks in a changing environment. Self-efficacy is a central part of Bandura’s social cognitive theory, which states that our personalities are developed through the experiences that we have and observation of how others behave (Bandura, 1986).

Self-efficacy is influenced by four sources: mastery experience, vicarious experience, verbal persuasions, and physiological indices (Bandura, 1977). First, as people overcome obstacles, have successes, and master different situations and materials, their belief in themselves increases. If an error is made, the employee must acknowledge that he or she has failed to master the project at hand, as well as the task of accurate planning. The employee may then begin to question his or her ability. Next, observing social models may have an influence on a person’s self-efficacy. If observers viewed someone who they perceive to be similar to themselves succeeding, they should experience an increase in their belief in themselves. Inversely, if these models work hard and still fail, observers may then experience a decrease in self-efficacy. Additionally, models can teach observers how to react to changes in the environment (Bandura, 1994). Thirdly, self-efficacy can be raised through the use of personal persuasion (Bandura, 1977). When people are told they are capable of mastery and succeeding by others who are either similar to them or to whom they look up, their belief in themselves should increase. This occurs because people work harder to raise themselves to the standards that they are told they are capable of reaching, and learn valuable skills along the way. These
social models also help to foster self-efficacy by positioning individuals in situations in which the individual is likely to succeed (Bandura, 1994). Finally, self-efficacy is influenced by mood and emotion (Bandura, 1977). As people experience different situations, they monitor their stress, moods, and emotions as indicators of their capability to succeed in these situations. When positive moods are high and stress is low, a person should experience the greatest increase in self-efficacy (Bandura, 1994).

**Self-efficacy antecedents and consequences.** Based on the work of Bandura (1991a), a number of positive outcomes are associated with high self-efficacy, whereas low self-efficacy produces challenges. Those high in self-efficacy set demanding goals and work harder to meet these goals. They internalize failures and attribute failure to a personal lack of effort. Those with high self-efficacy pursue more opportunities because they feel confident in their capabilities (Bandura, 1991a). High self-efficacy individuals exert high levels of control over their emotions and thoughts. Their ability to cope with new and difficult situations is high, and more self-directed activities are seen (Schwarzer, 1992). Finally, those with high self-efficacy are found to be healthier, less burdened by stress, and have healthier habits (Bandura, 1991a).

Conversely, those low in self-efficacy dwell on failure, attribute failures to low ability, and predict that they will continue to fail in the future (Bandura, 1991a). As a result, their ability to think analytically becomes impaired, and performance is negatively affected, thus confirming their prediction (Bandura, 1994). Fewer opportunities are taken advantage of because they feel as though they are not capable of succeeding and give up more quickly on opportunities that are attempted (Bandura, 1991b). Low self-efficacy individuals experience higher rates of anxiety and depression, have a difficult time
coping, exaggerate possible negative outcomes, are more distressed, and have greater avoidance behavior. Finally, low self-efficacy has been correlated with negative health habits and higher stress (Bandura, 1991a).

The effects of failure experiences on self-efficacy have received a relatively small amount of attention from researchers. First, Brown and Inouye (1978) found that vicarious experiences of failure resulted in a lessening of self-efficacy. Next, Lyman, Prentice-Dunn, Wilson, and Bonfilio (1984) found that feedback brought about by failure reduced self-efficacy in children. Additionally, Hardy (2014) found that failure experiences reduce self-efficacy directly following the experience and in succeeding experiences. This body of research supports the idea that failure and error experiences may have a negative effect on self-efficacy.

**Critiques of self-efficacy.** Self-efficacy, as defined by Bandura (1977), has suffered from definition clarity and measurement issues. Self-efficacy’s definition is often blurred with definitions of similar constructs. Self-efficacy’s distinction from self-esteem is the most common of these misinterpretations. These two constructs are different due mainly to their difference in scope of evaluation. Self-esteem is a trait depicting a person’s self-value and is generally thought to be a global evaluation of one’s self (Brockner, 1988). This is different from self-efficacy, which is a task-specific evaluation of belief in one’s self (Bandura, 1977). Although less common, self-efficacy is also confused with other constructs such as self-concept, subjective competence, perceived control, and expectancy (Bong, 1996). Bandura’s characterization of self-efficacy has also been criticized for its limited measurement applications and has been called a “micro-analytic measurement” (Schyns & von Collani, 2002, p. 221). Schyns and
von Collani (2002) argued that a task-specific measure of self-efficacy limits the measure’s applicability outside of the job or task that the task-specific measure was designed to assess. This is potentially problematic for organizational research, which often aims to make evaluations in a variety of organizational contexts. They propose that a “measurement scale of medium-level generality would permit an investigation of individual differences in self-efficacy associated with various professions and various jobs” (Schyns & von Collani, 2002, p. 221).

**Occupational self-efficacy.** Schyns and von Collani (2002) addressed many of the criticisms of Bandura’s (1977) conceptualization of self-efficacy by developing a more inclusive scale to address self-efficacy in an organizational setting. Schyns and von Collani termed their construct occupational self-efficacy. Occupational self-efficacy applies the concepts of self-efficacy to the workplace and is defined as an employee’s belief in his or her ability to execute behavior relevant to the job.

To measure this construct, Schyns and von Collani (2002) developed the occupational self-efficacy scale. This 19-item measure, later refined into an eight-item short form, was adapted from four scales: the general self-efficacy subscale (Sherer et al., 1982), the generalized self-efficacy subscale (Schwarzer, 1994), the hope scale (Snyder et al., 1991), and the heuristic competence scale (Staudel, 1988). Items from the scales were modified to align them with the occupational domain (Schyns & von Collani, 2002). The occupational self-efficacy scale was found to have significant relationships with general personality constructs, correlating positively with general self-efficacy, self-esteem, and locus of control, and correlating negatively with neuroticism. Factor analysis revealed that the occupational self-efficacy scale was unidimensional, and a reliability analysis
revealed a high level of internal consistency. Finally, the correlations between the occupational self-efficacy scale and the general personality constructs (i.e., general self-efficacy, self-esteem, locus of control, and neuroticism) supported occupational self-efficacy as a global personality construct and provided evidence of construct validity (Schyns & von Collani, 2002).

Judge, Erez, and Bono (1998) previously showed a relationship among these four constructs (i.e., general self-efficacy, self-esteem, locus of control, and neuroticism) in their core self-evaluation construct. Schyns and von Collani (2002) showed that their occupational self-efficacy measure had incremental predictive power above and beyond core self-evaluation by examining the relationship between occupational self-efficacy and other occupational constructs. The occupational self-efficacy scale was shown to significantly positively correlate with task demands, leader-member exchange, affective commitment, and satisfaction with supervisor, colleagues, and tasks, after controlling for core self-evaluation (Schyns & von Collani, 2002). Additionally, the short form of the occupational self-efficacy scale was validated across five countries: Germany, Sweden, Belgium, United Kingdom, and Spain (Rigotti, Schyns, & Mohr, 2008). In conclusion, the occupational self-efficacy scale has been shown to be correlated with relevant personality and organizational constructs, making occupational self-efficacy an applicable construct to examine self-efficacy in several organizational situations.

The construct of occupational self-efficacy has a great deal of potential application in organizational research. The main advantage of the occupational self-efficacy scale is its broad scope, allowing for employees’ self-efficacy levels to be compared across different organizational situations (Schyns & von Collani, 2002). This
extends research by providing investigators a valid measure that can be utilized in several organizational contexts, rather than relying on task-specific measures of self-efficacy, which may not exist for the specific application to which they wish to examine (Schyns & von Collani, 2002). Researchers have recently begun to utilize occupational self-efficacy in their organizational research, despite the construct being relatively new. They have examined its relationship with job satisfaction (Schyns & von Collani, 2002), individual performance (Rigotti et al., 2008), and work engagement (Chaudhary, Rangnekar, & Barua, 2013). Research has not expansively examined the extent to which employees can learn from planning errors and the role that a company’s culture may play in influencing employee occupational self-efficacy. The theoretical and practical implications of findings from such research support the need for further investigation of the topic.

Organizational Error Management Culture

Errors are a part of business and can be seen in nearly any organization. Errors are inevitable and organizations often have little influence on how or when they occur (Hartley, 2010). Organizations do however have control over their reactions to errors. This reaction to errors is referred to as an organization’s error management culture (van Dyck et al., 2005). Although error management culture may vary along a continuum, there are two general schools of thought that organizations implement in dealing with errors: a high error management culture and a low error management culture. High error management cultures accept errors and view them as learning opportunities, whereas low error management cultures focus exclusively on the negative consequences of errors and in turn are error-averse (van Dyck et al., 2005). Many organizations rely exclusively on
the latter because of an overemphasis on the negative consequences of errors and a lack of attention given to positive consequences (van Dyck et al., 2005). Research has followed suit by paying more attention to the concept of error prevention, rather than error management (Reason, 1990).

There are two limitations to this approach. First, it is unrealistic to think that errors can be completely prevented. Errors are bound to happen at some point (Reason, 1997), and to think that they can be completely prevented seems irrational. Second, focusing exclusively on preventing errors reduces the likelihood that those experiencing the errors will learn from their mistakes and reap the benefits of errors (Sitkin, 1996). Van Dyck et al. (2005) suggest that by using error management, organizations can acquire and utilize the many positive consequences that errors may bring, such as learning from mistakes, developing error coping strategies, and increasing error identification.

Error management acknowledges that errors are going to occur and examines ways to address them by focusing on the reaction. In addition, error management recognizes the value in learning from mistakes (Frese, 1991). A top-down approach, that is starting with top management and working down through the organization, is the most appropriate way to implement error management, which may be accomplished through an organization’s culture (Klein, Dansereau, & Hall, 1994). “Error management culture encompasses organizational practices related to communicating about errors, to sharing error knowledge, to helping in error situations, and to quickly detecting and handling errors” (van Dyck et al., 2005, p. 1229). When there is open communication about errors, employees are comfortable sharing error knowledge and are more aware of errors as they
occur. Employees are able to develop error coping strategies from observing their co-workers’ responses (Harteis, Bauer, & Gruber, 2008) and considering their viewpoints. This allows employees to not only learn from their own mistakes, but also from their co-workers’ mistakes, particularly in a team-based environment (Mathieu, Goodwin, Heffner, Salas, & Cannon-Bowers, 2000). In addition, employees are able to more quickly identify and deal with errors when they are openly communicated (Helmreich & Merritt, 2000). This, along with co-workers’ help, reduces the time between error identification and error response, thus minimizing the negative consequences of the errors (van Dyck et al., 2005).

The most appropriate way to incorporate error management into an organization’s culture is to start with error training. The goals of error training are to promote the recognition of errors by providing an environment that is accepting of errors (Frese, 1995; Frese & Altmann, 1989) and framing errors in a positive way (Steele-Johnson & Kalinoski, 2013). The concept of error training begins with the assumption that errors have the ability to provide feedback, and that this feedback is used as a tool to facilitate learning (Frese & Zapf, 1994). Errors allow for the acquisition of negative feedback and highlight areas that are yet to be mastered (Heimbeck, Frese, Sonnentag, & Keith, 2003). Error training is administered by providing trainees with only basic information about a problem or situation. This allows the trainees to learn through trial and error until they are able to solve the problem. This approach allows for errors to be made early and often (King, Holder, & Ahmed, 2013). This is less damaging to an organization because the majority of errors are made in the training phase, rather than in application (King et al., 2013). Frese et al. (1991) found this type of training to have a greater positive influence
on performance than training that focused on reducing errors. One important note though is that error training is only successful at increasing performance if it is accompanied by error management instructions. Error management instructions are needed to counteract the negative emotional effects, such as frustration and stress, experienced by trainees that errors typically cause (Heimbeck et al., 2003).

Learning from mistakes is another important component to error management. Errors in business offer an opportunity for employees to learn from their mistakes so they are equipped to deal with similar situations in the future. This type of learning is not typically the default for many organizations and requires support from the organization’s culture to be successful. Organizations must be willing to accept the occurrence of errors in order for their employees to experience this incidental learning that occurs in an employee’s day-to-day work (Harteis, Bauer, & Gruber, 2008). There are several reasons why it may be advantageous to learn from errors. For example, learning from errors reduces the likelihood of the error re-occurring in the future. This is done by improving the way an employee will address similar situations in the future and through the acquisition of “negative knowledge” (Oser, Hascher, & Spychiger, 1999). This negative knowledge about what is considered wrong in that context is acquired through experience (Gartmeier, Bauer, Gruber, & Heid, 2008) and is used as a reference point to avoid wrong behavior in the future.

Empirical research has shown that a high organizational error management culture has positive outcomes for the organization. Gronewold, Gold, and Salterio (2013; Gold, Gronewold, & Salterio, 2014) showed that employees in organizations with a high error management culture reported more self-discovered and peer errors, compared to a low
error management. These results together support the idea that a high error management
culture may lead to an increased ethical climate in organizations because organizational
members should be able to maintain their image of competence more easily in an
organization that highlights the positive effects of reporting such errors (Gronewold et al.,
2013). Additionally, Scheel and Hausmann (2013) found a significant positive correlation
between error management culture and knowledge performance. This suggests that a
higher error management culture may promote a greater sharing of knowledge, including
error knowledge, which may lead to greater knowledge performance (Scheel &
Hausmann, 2013). Even with extensive research done on the organizational effects of
error management culture, little research has given attention to the relationship between
error management culture and self-efficacy, and no research has examined its effect on
occupational self-efficacy. Further research is needed to investigate the effects of an
organization’s error management culture on occupational self-efficacy.

In summary, research has extensively explored the antecedents to planning errors,
but there is limited research on the consequences of planning errors brought about by the
planning fallacy (e.g., Halkjelsvik & Jorgensen, 2012). Additionally, little research has
examined the role of workplace culture in dealing with planning errors. The primary
purpose of the current study is to examine the relationship between project planning
errors, brought about by the planning fallacy, and occupational self-efficacy. This study
also examined the effect of organizational culture on the relation between planning errors
and occupational self-efficacy.
Chapter II

Rationale and Hypotheses

Errors in planning brought about by the planning fallacy have been extensively researched (see Halkjelsvik & Jorgensen, 2012, for a review), but no studies, known to the present author, have examined the effects of planning errors on occupational self-efficacy. Furthermore, little is known about the role that an organization’s error management culture may play on the occupational self-efficacy consequences of planning errors. The purpose of this research was to examine the effects of project planning errors, brought about by the planning fallacy, on occupational self-efficacy. In addition, this study investigated the effect of organizational error management culture on the relationship between planning errors and occupational self-efficacy.

As previously stated, self-efficacy is influenced by four main sources: mastery experience, vicarious experience, verbal persuasion, and physiological indices (Bandura, 1977). With this being said, due to the design of the study and characteristics of planning errors, the current study focused on the influence of mastery experience. When an employee fails or makes a large error, such as underestimating the time needed to complete a project, the employee’s mastery experience will likely be negatively impacted. A failure experience, such as this, will likely reduce self-efficacy directly following the experience and in succeeding experiences (Hardy, 2014). This lowers the employee’s mastery expectations, potentially decreasing his or her self-efficacy.
Previous research has found that planning errors occur across a variety of organizational contexts (Buehler et al., 1994; The Standish Group International, Incorporated, 2013). Employees at all levels of an organization and in any industry are capable of executing planning errors. For this reason, among others previously mentioned, it was more appropriate to evaluate occupational self-efficacy, rather than task-specific self-efficacy, as defined by Bandura (1977). Considering the effects of failure experiences, the prevalence of planning errors, and their relationship to self-efficacy, the following was proposed:

\[ H1: \text{There will be a main effect of planning errors on occupational self-efficacy, such that occupational self-efficacy will be lower in the planning errors condition than in the no planning errors condition.} \]

Bandura (1977) noted that we can increase self-efficacy when there is failure by experiencing and learning from our mistakes. Error management culture looks to address this point. High and low error management cultures are likely to influence an organization’s employees in different ways. High error management cultures accept errors and view them as learning opportunities, whereas low error management cultures focus exclusively on the negative consequences of errors and in turn are error-averse (van Dyck et al., 2005).

A high error management culture supports and encourages learning from errors and recognizes that errors are going to occur (van Dyck et al., 2005). High error management culture relies on an open form of communication to promote learning from errors. Errors must be identified and addressed quickly, leading to the development of error-coping strategies and allowing for employees to learn from their own and their co-
workers’ mistakes (Mathieu et al., 2000). If errors are accepted and error lessons can be communicated freely within the organization, the negative effects of errors on occupational self-efficacy should be reduced. Additionally, positive error framing, or promoting identification and learning from errors, has been shown to significantly increase self-efficacy (Steele-Johnson & Kalinoski, 2013). Applying this type of framing to an organizational culture should enhance employees’ occupational self-efficacy levels.

A low error management culture stigmatizes errors and focuses exclusively on the negative consequences without considering the positive consequences of errors (van Dyck et al., 2005). Error prevention is the main goal of a low error management culture, and this approach may have damaging effects on employees when errors do occur. Low error management culture limits communication between employees due to fears of revealing errors and discourages risk and innovation (van Dyck et al., 2005). This should reduce employees’ confidence in their ability to carry out tasks and projects. Additionally, negative error framing, or promoting avoidance of errors because they are viewed as failures, has been shown to significantly reduce self-efficacy (Steele-Johnson & Kalinoski, 2013). When this type of framing is applied to an organizational culture, the results should be injurious to employees’ occupational self-efficacy. Based on these prior findings, the following was expected:

**H2:** There will be a significant interaction between error management culture and planning errors, such that the effect of planning errors on occupational self-efficacy will be stronger in a low error management culture than in a high error management culture (see Figure 1).
Figure 1. Hypothesized interaction between experiencing planning errors and error management culture on occupational self-efficacy.
Chapter III

Method

Participants

The present study utilized Xavier University School of Psychology’s participant pool to acquire a sample of undergraduate students (see Appendix A for the study announcement). Participants who were at least 18 years old were recruited, and no restrictions based on gender or race were in place when recruiting participants. Undergraduates were used because of the increased likelihood of collecting data in a timely manner, the low cost of data collection, and the convenience of access to the sample. Following the completion of the study, each participant was awarded 15 minutes of research participation credit. This study used a 2 (planning error: present, not present) x 2 (error management culture: high, low) between-subjects factorial design.

A total of 262 people participated in this study. Data collected from 39 participants were discarded because participants either did not complete the study in its entirety ($n = 7$) or they failed at least one of the two manipulation checks. Nineteen participants failed the first manipulation check which asked participants to indicate if the company allowed any room for error in estimating how long the project would take, whereas seven participants failed the second manipulation check in regards to if they completed the project on time, and six participants failed both manipulation checks. There was an uneven distribution in participants who failed the planning error, high
error management culture condition \((n = 17)\) compared to the other three conditions, which averaged five fails per condition. Crosstab analysis was performed to determine if any demographic differences existed between participants who passed and participants who failed the manipulation checks in the planning error, high error management culture condition. No noticeable demographic differences were found.

This resulted in a final sample size of 223 participants. Fifty-nine participants were randomly assigned to the planning error, low error management culture condition, 46 participants were randomly assigned to the planning error, high error management culture condition, 60 participants were randomly assigned to the no planning error, low error management culture condition, and 58 participants were randomly assigned to the no planning error, high error management culture condition. Overall, the sample had an average age of 20.07 years \((SD = 3.66\) years) and consisted of primarily female students (77.6%), followed by males (22.0%) and students who preferred not to respond (0.4%). Regarding race/ethnicity, 82.1% reported they were White or Caucasian, 6.7% reported they were Black or African American, 3.6% reported they were Asian, 3.6% reported they were Hispanic or Latino, 1.8% reported they were biracial/multiracial, 0.4% reported their race/ethnicity as American Indian or Alaska Native, 0.4% reported race/ethnicity as Native Hawaiian or Other Pacific Islander, 0.4% reported “Other,” and 0.9% preferred not to respond. In regards to work history, 94.2% reported that they had been previously employed, and 56.5% reported they were currently employed at the time of data collection.
Materials and Measures

**Vignettes.** Each participant was randomly assigned to one of four vignettes about completing a project at a fictitious company. The participants were asked to read and imagine themselves in the scenario described in the vignette. This was done because Buehler, Griffin, and Ross (1995) found that the optimistic bias associated with planning errors is reversed to a pessimistic bias when participants are asked to estimate the completion time of another individual. The vignettes were constructed using a 2 (planning error: present, not present) x 2 (error management culture: high, low) between-subjects factorial design.

The first part of the vignette was consistent throughout all four vignettes and described how the participants’ boss had a project for them to complete, and they were asked to estimate the time needed to complete the project. The participants provided an estimate to their boss. The second part of the vignette contained the manipulations. In the planning error condition, the participant was described as making a planning error when completing the project, whereas in the no planning error condition, no error was made, and the project was completed on time. Consistent with van Dyck et al. (2005), the company was described as being open to errors and emphasized communication and learning from errors in the high error management culture condition, whereas in the low error management culture condition, the company was described as not being open to errors and penalized the participant if an error was made. The vignettes in their entirety can be seen in Appendix B.

**Occupational self-efficacy.** The criterion measure for this study was the Occupational Self-Efficacy (OCCSEFF) scale (Schyns & von Collani, 2002). The
OCCSEFF scale is the only measure of occupational self-efficacy known to the current author. An adapted form of the OCCSEFF scale was used to measure occupational self-efficacy with regard to the scenarios depicted in the vignettes. To ensure items reflected the planning error and error management constructs, as defined in the scenarios, items were reworded to specify the focus and scope of the information that the participant was to draw from when responding to the items. The phrase “in such an environment” was added to the beginning of the items, and the tense of the items was changed from present to future tense to align with the scenario depicted in the vignette and the instructions, “evaluate your future performance in such an environment.”

The 19 items were answered on a 5-point scale ranging from 1 (completely untrue) to 5 (completely true). This scale was altered from the original 6-point scale ranging from 1 (completely true) to 6 (not at all true) because Schyns and von Collani (2002) provided labels for only the terminal anchor points and used a 6-point scale that did not allow participants to select a neutral response option. Consequently, the alterations were done to promote symmetry in the terminal anchor points, clarify the labels for all anchor points, and allow for a neutral response option. A sample item from this measure is “I am confident that I would deal efficiently with unexpected events in my job in such an environment.” The overall scale score was created by averaging the scores of the items. Items labeled “(R)” were reverse-coded prior to computing the mean. Higher scores indicate higher levels of occupational self-efficacy. The original validation study for the 19-item scale reported an alpha of .92 (Schyns & von Collani, 2002). An eight-item short form was also constructed by the same authors, which had an alpha of .88 (Schyns & von Collani, 2002). Items labeled “(S)” indicate those items included in
the short form. The 19-item adapted form of the OCCSEFF scale used in this study yielded an alpha of .90, and the 8-item short form yielded an alpha of .88. It should be noted that although the response scale was changed from a 6-point response scale to a 5-point response scale with a neutral point, the reliabilities found in this study were similar to the reliabilities reported by Schyns and von Collani.

**Manipulation check items.** Following the criterion measure, participants were asked two manipulation check items regarding the manipulated components of the vignettes to ensure they carefully read and understood the vignette. An incorrect answer to either of these manipulation check items demonstrated low-quality responses, and the respondent’s data were not included in the study’s main analysis. The manipulation check items can be seen in Appendix C.

**Response quality items.** Following the manipulation check items, participants were asked three response quality items. These items were used to assess if participants experienced any technical issues, distractions, or confusion while completing the study. The primary use of these data was to help the researcher correct any technical issues in the study. Results showed that 98.2% of respondents reported no technical issues while completing the study. Upon review of the open ended responses to the 1.8% of respondents who reported technical issues while completing the study, it appeared that their technical issues were resolved prior to completing the study. That being said, all participants who passed the two manipulation check items were included in the primary analyses. Any exclusion of participants due to response quality item responses was used only in additional, exploratory analyses. The response quality items can be seen in Appendix D.
Demographics. Each participant of the study was asked to indicate his or her age, gender, race/ethnicity, major in school, year in college, employment status, and work experience (see Appendix E).

Procedure

The present study was submitted to Xavier University’s Institutional Review Board (IRB) and received “Exempt” status (please see Appendix F for the IRB approval letter). There was no potential harm presented to participants, and responses remained anonymous. All materials and measures for this study were posted on Qualtrics. Participants were asked to follow a web link (see Appendix A) to participate in the study. The study began by presenting the participants with the informed consent form. In this form, participants were told that the purpose of the study was to evaluate future performance in a work environment (see Appendix G). If participants gave their consent to partake in the study by pressing the “Next” button, they were randomly assigned to one of four conditions: reading a vignette with planning errors and a high error management culture, reading a vignette with planning errors and a low error management culture, reading a vignette with no planning errors and a high error management culture, or reading a vignette with no planning errors and a low error management culture. Participants read the vignette and then responded to the OCCSEFF measure, manipulation check items, response quality items, and demographic items.

Following the completion of the OCCSEFF measure, manipulation check items, response quality items, and demographic items, participants were directed to a separate survey where they were presented with a debriefing form (see Appendix H) and thanked for their participation in the study. At this time, participants also indicated their name,
their professor’s name, and the course for which they wanted to receive research participation credit. This information was used to award each participant 15 minutes of research credit. All data for this study were collected and stored on the Qualtrics website. To maintain participant anonymity, the Qualtrics software did not store any participant identifiers (e.g., IP address). Once data collection was complete, data were transferred from the Qualtrics website to password-protected computers to which only the researcher and faculty advisor have access. Data on the Qualtrics website were then deleted.
Chapter IV

Results

Hypothesis 1 examined the relationship between planning errors and occupational self-efficacy. Specifically, it was proposed there would be a main effect of planning errors on occupational self-efficacy, such that occupational self-efficacy would be lower in the planning errors condition than in the no planning errors condition. Hypothesis 2 proposed there would be a significant interaction between error management culture and planning errors, such that the effect of planning errors on occupational self-efficacy would be stronger in a low error management culture than in a high error management culture. As previously stated, four vignettes were used to portray the four conditions. Results were consistent between both the long form and short form of the scale. Consequently, only results from the adapted, 19-item long form of the OCCSEFF scale were reported.

A 2 x 2 between-subjects factorial analysis of variance (ANOVA) was utilized to examine both hypotheses. Results showed a significant main effect of planning errors on occupational self-efficacy, \( F(1, 219) = 14.17, p < .001, \eta^2_p = .06 \), such that occupational self-efficacy was lower in the planning errors condition \( (M = 3.98, SD = 0.56) \) than in the no planning errors condition \( (M = 4.24, SD = 0.44) \). This result provides support for Hypothesis 1, suggesting that planning errors have a negative effect on one’s occupational self-efficacy. There was no significant interaction between planning errors
and error management culture on occupational self-efficacy, $F(1, 219) = 1.40, p = .238, \eta^2_p = .01$. Therefore, Hypothesis 2 was not supported, and this finding suggests that error management culture did not play a significant role in reducing the observed negative effects of planning errors on occupational self-efficacy (see Table 1 for means and standard deviations by condition and Table 2 for the ANOVA results). Moreover, as expected, there was no significant main effect of error management culture on occupational self-efficacy, $F(1, 219) = 1.03, p = .312, \eta^2_p = .01$. This result suggests that occupational self-efficacy levels did not significantly differ between the high error management culture condition ($M = 4.16, SD = 0.44$) and the low error management culture condition ($M = 4.08, SD = 0.58$).
Table 1

*Means and Standard Deviation for the Study Conditions*

<table>
<thead>
<tr>
<th>Planning Error (PE)</th>
<th>Error Management Culture (EMC)</th>
<th>High EMC</th>
<th>Low EMC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>PE</td>
<td></td>
<td>4.06</td>
<td>0.41</td>
</tr>
<tr>
<td>No PE</td>
<td></td>
<td>4.23</td>
<td>0.45</td>
</tr>
</tbody>
</table>
Table 2

Two-Way Between-Subjects Factorial ANOVA Results

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$\eta_p^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning Error</td>
<td>3.58</td>
<td>1</td>
<td>3.58</td>
<td>14.17</td>
<td>.001</td>
<td>.06</td>
</tr>
<tr>
<td>Error Management Culture</td>
<td>0.26</td>
<td>1</td>
<td>0.26</td>
<td>1.03</td>
<td>.312</td>
<td>.01</td>
</tr>
<tr>
<td>Planning Error * Error</td>
<td>0.35</td>
<td>1</td>
<td>0.35</td>
<td>1.4</td>
<td>.238</td>
<td>.01</td>
</tr>
<tr>
<td>Management Culture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>55.26</td>
<td>219</td>
<td>0.25</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter V

Discussion

The purpose of this study was to examine the effects of planning errors and organizational error management culture on occupational self-efficacy. Self-efficacy refers to one’s belief in his or her abilities (Bandura, 1986). Occupational self-efficacy applies the concepts of self-efficacy to the workplace and is defined as an employee’s belief in his or her ability to execute behavior relevant to the job (Schyns & von Collani, 2002). Due to the nature of the research, the construct of organizational error management culture seemed appropriate to address the effects of planning errors. Error management culture acknowledges the presence of errors and emphasizes the learning opportunities that errors offer (van Dyck et al., 2005). Research has extensively explored the antecedents to planning errors, but there is limited research on the consequences of planning errors brought about by the planning fallacy (e.g., Halkjelsvik & Jorgensen, 2012). Additionally, little research has examined the role of workplace culture in dealing with planning errors. The current study aimed to address these gaps in the literature.

Hypothesis 1 examined the relationship between planning errors and occupational self-efficacy. Specifically, it was proposed there would be a main effect of planning errors on occupational self-efficacy, such that occupational self-efficacy will be lower in the planning errors condition than in the no planning errors condition. Results showed a significant main effect of planning errors on occupational self-efficacy, such that
occupational self-efficacy was lower in the planning errors condition than in the no planning errors condition. Therefore, *Hypothesis 1* was supported. As previously stated, self-efficacy is influenced by mastery experiences (Bandura, 1977). When the employee in the scenario underestimated the time needed to complete the project, the employee’s mastery experience was likely negatively impacted, which reduced self-efficacy (Hardy, 2014). The current research examined changes in employee self-efficacy levels in an organizational situation in which planning errors may be prevalent. For this reason, occupational self-efficacy was evaluated, rather than self-efficacy, as defined by Bandura (1977). In sum, *Hypothesis 1* was supported and previous research supports the finding that planning errors negatively affect one’s occupational self-efficacy.

*Hypothesis 2* proposed there would be a significant interaction between error management culture and planning errors, such that the effect of planning errors on occupational self-efficacy will be stronger in a low error management culture than in a high error management culture. Results showed no significant interaction between planning errors and error management culture on occupational self-efficacy. Therefore, *Hypothesis 2* was not supported.

A potential explanation for this lack of support for an interaction between planning errors and error management culture on occupational self-efficacy can be attributed to the complexity of error management culture. Van Dyck et al. (2005) stated that “error management culture encompasses organizational practices related to communicating about errors, to sharing error knowledge, to helping in error situations, and to quickly detecting and handling errors” (p. 1229). Although this study attempted to depict these themes throughout the scenario, they were only presented at face value and
potentially did not provide the participant with a thorough and complete understanding of these complex organizational behaviors. Furthermore, error management culture is demonstrated through a top-down approach in an organization, starting with top management and working down through the organization (Klein, Dansereau, & Hall, 1994). This was not thoroughly depicted in the scenarios used in this study, which focused much more on a supervisor-subordinate interaction.

Moreover, this proposed explanation may have been exacerbated by the use of vignettes in this study. Specifically, using hypothetical vignettes may have weakened the effectiveness of the manipulation of error management culture because they may have failed to capture the intricacy of the construct. It is likely that an employee will have a much more impactful experience if they actually worked in and experienced an organization which demonstrates a high or low error management culture, rather than trying to imagine themselves in a scenario that they read. If employees personally work in an organization which demonstrates a high or low error management culture, they may, as suggested in the research, develop error-coping strategies (Harteis, Bauer, & Gruber, 2008), learn from co-workers’ mistakes (Mathieu et al., 2000), and openly communicate errors (Helmreich & Merritt, 2000). All of these behaviors are difficult to portray in a hypothetical scenario. Finally, error management training has been referenced as an appropriate way to incorporate error management into an organization’s culture (Frese, 1995; Frese & Altmann, 1989; Steele-Johnson & Kalinoski, 2013). Perhaps if participants partook in error management training, they would have experienced the qualities of error management culture to a greater extent. In sum, the lack of a significant interaction between error management culture and planning errors in this
study may be due to the use of a hypothetical scenario which did not encompass all of the complex features of error management culture, ultimately weakening the manipulation of error management culture.

Theoretical and Practical Implications

Theoretical implications. The results of the current study have a number of theoretical implications in the areas of planning errors, the planning fallacy, and occupational self-efficacy. First, these results add to the limited research on planning error consequences. As previously mentioned, former research has extensively explored the antecedents to planning errors (see Halkjelsvik & Jorgensen, 2012, for a review), but there is still limited research on the consequences of planning errors brought about by the planning fallacy. Therefore, this study contributes to both the workplace error experience literature, as well as the planning fallacy literature, by expanding on the consequences of these constructs. Specifically, these results showed that planning errors have a negative consequence on one’s occupational self-efficacy levels. Additionally, these results provide greater insight into understanding how employees are affected by errors in the workplace and the negative effects that these errors can have on their self-belief in regards to their jobs. These contributions will hopefully prompt more researchers to take interest in the consequences of error experiences and the planning fallacy.

The current study also has theoretical implications for the literature in regards to occupational self-efficacy. Although past research has examined self-efficacy in an organizational context (e.g., Judge, Jackson, Shaw, Scott, & Rich, 2007; Stajkovic & Luthans, 1998), the focus was primarily on task-specific self-efficacy, as opposed to occupational self-efficacy, which can be evaluated across a variety of tasks and jobs.
These results provide additional support for the use of the OCCSEFF scale and occupational self-efficacy in general by demonstrating another application for the measure and expanding the literature on the topic. Furthermore, there has only been a limited number of studies published that have examined occupational self-efficacy in general, none of which have examined errors, let alone planning errors. Consequently, these results add an important extension to the currently narrow body of occupational self-efficacy literature.

**Practical implications.** Results from the current study have practical implications for how organizations may identify potentially at-risk employees and how to help employees to reduce and deal with errors. The results of this study demonstrate that planning errors can have negative effects on occupational self-efficacy. Considering the prevalence (Buehler et al., 1994; The Standish Group International, Incorporated, 2013) and extensive list of tasks and situations where planning errors are likely to occur (Halkjelsvik & Jorgensen, 2012), organizations should take note of this study’s results. Knowing that people who make planning errors report lower levels of occupational self-efficacy, organizations, managers, practitioners, and employees should look to minimize or reduce the likelihood that these errors will occur. Although the current study examined only one strategy to address these errors, that is implementing an error management culture, there are a number of other techniques, supported by empirical research, that organizations should consider implementing. Some of these techniques include asking individuals to estimate the completion time for another individual, rather than for themselves (Buehler et al., 1995), estimating the time to complete each component of the task, rather than the task as a whole (Forsyth & Burt, 2008), making implementation
intentions about where and when the task or project will be complete (Koole & Van't Spijker, 2000), providing error management training (Frese, 1995; Frese & Altmann, 1989; Steele-Johnson & Kalinoski, 2013), and unpacking the task or project by breaking it down into its individual facets (Kruger, & Evans, 2004). Implementing these strategies, among others, will likely reduce the negative consequences brought about by experiencing planning errors.

This study also has practical implications for the use of the OCCSEFF scale in organizations. The main advantage of the OCCSEFF scale, compared to other measures of self-efficacy, is its medium-level scope, allowing for employees’ self-efficacy levels to be compared across different organizational situations (Schyns & von Collani, 2002). These results provide additional support for the use of the OCCSEFF scale in organizational environments. This may be more appropriate than relying on task-specific measures of self-efficacy, which may not exist for the specific application one wishes to examine, or general self-efficacy measures, which may be too broad to provide accurate and valid measures of self-efficacy in different organizational contexts. This scale can help organizations measure their employees’ occupational self-efficacy, which can help them to better understand their employees’ beliefs about their ability to execute behavior relevant to their job. This information can be helpful in determining who is in need of additional training, resources, or coaching.

Limitations and Future Research Directions

As in any study, the present study had a few limitations. First, due to the methods used in this study, participants were able to access and complete the study in any location that has access to the internet. This method has both advantages and disadvantages. The
advantage is that participants were able to participate in the study at their convenience, which likely promoted timely data collection, as participants did not have to be present at a specific location and time to complete the study.

The disadvantage to this method is that the experimenter was unable to hold environmental variables constant. Responses to the response quality items potentially showed evidence of this limitation. For example, 15.2% reported experiencing a distraction while completing the study. However, upon review of the open-ended responses to the nature of the distraction, the majority of responses could be considered minor (e.g., quick conversation with another person, people talking in the background, receiving a text message, noise or music in the background). Additionally, 10.3% reported that a part of the study was unclear to them. Upon review of the open-ended responses to what was unclear, a number of themes emerged. These included, having to re-read the OCCSEFF scale items because they were unclear at first, difficulty imagining themselves in the scenario, and not understanding the OCCSEFF scale items because of their wording. That being said, each of these participants passed both of the manipulation check items, which demonstrated that these participants carefully read and comprehended the content of the study. These issues may be addressed in future studies by administering the study in a more controlled environment. This would likely reduce the number of distractions and would allow the researcher to answer any questions the participants may have. Future researchers conducting surveys should consider including similar response quality items to better understand distractions.

The next potential limitation related to the student sample used in this study. Like the online method of this study, there are both advantages and disadvantages to using a
student sample. The greatest advantages to using a student sample included the ability to collect data in a timely manner, the low cost of data collection, and the convenience of access to the sample. These three advantages helped to obtain the relatively high required sample size of 180 participants.

Some disadvantages of utilizing a student sample included issues related to the diversity of the sample and the generalizability of the finding. Forbes (Xavier University, n.d.) reported that 78% of Xavier University’s student population was White, and 54% of the population was female in the spring of 2013. However, these figures are relatively similar to the overall labor force population in the United States. The U.S. Bureau of Labor Statistics reported that 79% of the overall labor force population was White, and 47% of the population was female in 2013 (The U.S. Bureau of Labor Statistics, 2014). To promote generalizability, the vignettes used in the study were designed to present the participant with a scenario general enough that anyone who has had work experience or has worked on a project should be able to imagine himself or herself in the scenario. This is important for two reasons. First, it permitted the use of a student sample because it is likely that most college students would have either worked on a project or have had work experience prior to participating in the study. This was confirmed by the demographic data of the sample which showed that 94% of the participants reported being previously employed. Second, it allows these findings to be generalizable to a variety of organizational contexts. To improve diversity and generalizability, future research may consider conducting a similar study within an organization or with a population who has more work experience. This could be done by administering this study to a group of employees within a company or to a sample of Mechanical Turk workers.
Another potential limitation of this student sample is the environment in which the students live and work. It could also be argued that the college setting is one that exhibits many of the traits of a high error management culture. That is, the college setting is relatively tolerant and accepting of errors because students can learn from other students’ mistakes and develop error-coping strategies, and there are increased opportunities to openly communicate errors. Consequently, the sample’s environment may have influenced participants’ perceptions of occupational self-efficacy in this study. Future research can address this issue by asking participants about their perceptions of the error management culture in their school environment and if there are any consequences when it comes to planning errors. That being said, students should still be considered a meaningful sample in this study, as most participants (94%), reported being previously employed. To further strengthen this argument, future researchers should also ask participants about actual planning errors on the job.

The use of vignettes in this study could also be considered a potential limitation. Due to the content of the scenarios described in the vignettes, there were minor inconsistencies across conditions. For example, in the high error management culture and no planning error condition, the supervisor was pleased that the project was completed on time. However, in the high error management culture and planning error condition, it did not make sense for the supervisor to be pleased that an error was made. These inconsistencies across vignettes may have also contributed to the uneven distribution of participants failing the manipulation checks across conditions. This potential concern was addressed by aligning the content of the manipulations to the definitions of the constructs, as defined in the literature. Therefore, even though there are slight inconsistencies across
conditions, the content of the vignettes was consistent with the descriptions of the constructs. Additionally, the supervisor in the vignettes was depicted with a specific name and as a male to promote clarity and understanding. Although this may affect the external validity of the findings, this should not have affected internal validity because these variables were held constant across conditions. Therefore, using hypothetical vignettes allowed the researcher to control for any confounding variables, while being able to isolate the independent variables. Moreover, vignettes are widely accepted in organizational research (Murphy, Herr, Lockhart, & Maguire, 1986).

The final potential limitation of this study is in regards to using the adapted form of the OCCSEFF scale to measure occupational self-efficacy. As mentioned previously, the phrase “in such an environment” was added to the beginning of the scale items, and the tense of the items was changed from present to future tense to align with the scenario depicted in the vignette and the instructions asking participants to evaluate their future performance in such an environment. In other words, these adaptations may have changed the conceptual nature of the items. Specifically, these item alterations may have shifted the measurement from actual self-efficacy in a work context to perceptions of self-efficacy in a work context. This perceptual focus may have inflated the results and caused a ceiling effect, as levels of occupational self-efficacy are relatively high in both the “planning errors” and “no planning errors” conditions. Future research in the planning error and workplace culture domains should attempt to measure actual occupational self-efficacy, rather than perceived occupational self-efficacy.

To combat many of the identified potential limitations, future research should explore if these results could be replicated or expanded in an organizational context,
rather than being illustrated through vignettes. Error management culture may play a larger role in reducing the observed negative effects of planning errors on occupational self-efficacy in an organizational context where the culture may be more impactful, compared to being illustrated through a vignette. Future research should continue to explore additional consequences of planning errors and other errors in the workplace and ways to reduce the negative effects of the errors when they do occur. Moreover, future research could examine if differences in the scenarios, such as the length of time expected to complete the project or the gender of the boss, would result in changes to participants’ responses on the OCCSEFF scale.

This study focused primarily on the mastery experiences. Further research should investigate if similar results are obtained when the other three influencers of self-efficacy (i.e., vicarious experience, verbal persuasion, and physiological indices) are examined. Furthermore, Mathieu et al. (2000) suggested that in an organizational error management culture, employees not only learn from their own mistakes, but also from their co-workers’ mistakes, particularly in a team-based environment. Another potential research avenue is investigating organizational management error culture in a team-based context. Finally, future research should examine if these observed negative effects of planning errors on occupational self-efficacy can be seen in other kinds of error experiences, such as knowledge-based errors, skill-based errors, or non-compliance errors.

Conclusions

In conclusion, the current study’s findings suggest that planning errors have a negative effect on one’s occupational self-efficacy. Organizations, managers, practitioners, and employees should consider the results of this study and should work to
implement strategies to minimize or reduce the likelihood that these planning errors will occur in their organization. Future research should continue to explore additional consequences of planning errors and other errors in the workplace. Moreover, future research should further examine ways that organizations can reduce errors in their employees and ways to reduce the negative effects of the errors when they do occur.
Chapter VI

Summary

Failing to complete a task or project on time is common in organizations. One reason why people may not complete projects on time is because they experience planning errors. Organizations must do their best to minimize errors, but research has shown that planning errors may inevitably occur for a variety of tasks and projects (Buehler, Griffin, & Ross, 1994; The Standish Group International, Incorporated, 2013). The purpose of the current study was to examine the effects of planning errors and organizational error management culture on occupational self-efficacy. This study is important because organizations should be aware of the negative effect project planning errors may have on employees. There is also value in knowing what organizations can do to both reduce the negative consequences of errors and highlight the positive consequences.

The Planning Fallacy and Planning Errors

The term “planning fallacy” was originally coined by Kahneman and Tversky (1979) and states that we are likely to underestimate the time needed to complete a project. The problem with making accurate predictions is we rely too heavily on singular information, the data associated with the current situation, and do not rely enough on distributional information, the outcomes of similar situations, even when this distributional information is readily available (Kahneman & Tversky, 1973). The issue
with this “internal approach” (Kahneman & Tversky, 1979, p. 318) is we often underestimate the probability of situational hurdles or do not even take them into consideration (Bar-Hillel, 1973). This optimistic bias holds true, regardless of the amount of information available. Many reasons have been cited as to why people are unsuccessful at transferring information from past experiences to help guide their present planning decisions. These include the difficulty of seeing direct similarities between situations (Kahneman & Tversky, 1973), individuals comparing their current situation to nonequivalent situations (Kahneman & Tversky, 1979), and the way individuals interpret the causes of planning errors in previous situations. It has been shown that these planning errors are extensive, apply to several situations and can be seen in both large and small projects. The financial, social, and personal costs of making planning errors are great, but research has shown that even when the penalty for failure is great, the fallacy persists (Kahneman & Tversky, 1973). Planning errors lead to inaccurate allocations of time and resources, as well as inaccurate forecasting (Lovallo & Kahneman, 2003).

**Occupational Self-Efficacy**

**Original conceptualization.** Bandura (1977) described self-efficacy as a person’s belief in his or her ability to produce a certain outcome or accomplish a task. Said another way, it is self-belief in the capability to adapt and utilize resources to accomplish goals and tasks in a changing environment. Self-efficacy is a central part of Bandura’s social cognitive theory, which states that our personalities are developed through the experiences that we have and observation of how others behave (Bandura, 1986).

Self-efficacy is influenced by four sources: mastery experience, vicarious experience, verbal persuasions, and physiological indices (Bandura, 1977). First, as
people overcome obstacles, have successes, and master different situations and materials, their belief in themselves increases. If an error is made, the employee must acknowledge that he or she has failed to master the project at hand. The employee may then begin to question his or her ability. Next, observing social models may have an influence on a person’s self-efficacy. If observers viewed someone who they perceive to be similar to themselves succeeding, they should experience an increase in their belief in themselves. Inversely, if these models work hard and still fail, observers may then experience a decrease in self-efficacy. Additionally, models can teach observers how to react to changes in the environment (Bandura, 1994). Thirdly, self-efficacy can be raised through the use of personal persuasion (Bandura, 1977). When people are told they are capable of mastery and succeeding by others who are either similar to them or to whom they look up, their belief in themselves should increase. This occurs because people work harder to raise themselves to the standards that they are told they are capable of reaching, and learn valuable skills along the way. These social models also help to foster self-efficacy by positioning individuals in situations in which the individual is likely to succeed (Bandura, 1994). Finally, self-efficacy is influenced by mood and emotion (Bandura, 1977). As people experience different situations, they monitor their stress, moods, and emotions as indicators of their capability to succeed in these situations. When positive moods are high and stress is low, a person should experience the greatest increase in self-efficacy (Bandura, 1994).

**Occupational self-efficacy.** Self-efficacy, as defined by Bandura (1977), has suffered from definition clarity and measurement issues. Self-efficacy’s definition is often blurred with definitions of similar constructs and has also been criticized for its
limited measurement applications and has been called a “micro-analytic measurement” (Schyns & von Collani, 2002, p. 221). Schyns and von Collani (2002) addressed many of the criticisms of Bandura’s (1977) conceptualization of self-efficacy by developing a more inclusive scale to address self-efficacy in an organizational setting. Schyns and von Collani termed their construct occupational self-efficacy. Occupational self-efficacy applies the concepts of self-efficacy to the workplace and is defined as an employee’s belief in his or her ability to execute behavior relevant to the job. To measure this construct, Schyns and von Collani (2002) developed the occupational self-efficacy scale. The occupational self-efficacy scale has been shown to be correlated with relevant personality and organizational constructs, making occupational self-efficacy an applicable construct to examine self-efficacy in several organizational situations.

**Organizational Error Management Culture**

Errors are a part of business and can be seen in nearly any organization. Errors are inevitable and organizations often have little influence on how or when they occur (Hartley, 2010). Organizations do however have control over their reactions to errors. This reaction to errors is referred to as an organization’s error management culture (van Dyck, Frese, Baer & Sonnentag, 2005). High error management cultures accept errors and view them as learning opportunities, whereas low error management cultures focus exclusively on the negative consequences of errors and in turn are error-averse (van Dyck et al., 2005). Error management culture acknowledges that errors are going to occur and examines ways to address them by focusing on the reaction. In addition, error management culture recognizes the value in learning from mistakes (Frese, 1991). “Error management culture encompasses organizational practices related to communicating
about errors, to sharing error knowledge, to helping in error situations, and to quickly
detecting and handling errors” (van Dyck et al., 2005, p. 1229).

**Hypotheses**

As previously stated, self-efficacy is influenced by four main sources: mastery
experience, vicarious experience, verbal persuasion, and physiological indices (Bandura,
1977). With this being said, due to the design of the study and characteristics of errors,
the current study focused on the influence of mastery experience. When an employee
fails or makes an error, the employee’s mastery experience will likely be negatively
impacted. A failure experience, such as this, will likely reduce self-efficacy directly
following the experience and in succeeding experiences (Hardy, 2014). This lowers the
employee’s mastery expectations, potentially decreasing his or her self-efficacy.

Employees at all levels of an organization and in any industry are capable of executing
errors. For this reason, among others previously mentioned, it was more appropriate to
evaluate occupational self-efficacy, rather than self-efficacy, as defined by Bandura
(1977). Considering the effects of failure experiences, the prevalence of errors, and their
relationship to self-efficacy, the following was proposed:

*H1*: There will be a main effect of errors on occupational self-efficacy, such that
occupational self-efficacy will be lower in the error condition than in the no error
condition.

Bandura (1977) noted that we can increase self-efficacy when there is failure by
experiencing and learning from our mistakes. Error management culture looks to address
this point. Error management culture supports and encourages learning from errors and
recognizes that errors are going to occur (van Dyck et al., 2005). Error management
culture relies on an open form of communication to promote learning from errors. Errors must be identified and addressed quickly, leading to the development of error-coping strategies and allowing for employees to learn from their own and their co-workers’ mistakes (Mathieu et al., 2000). If errors are accepted and error lessons can be communicated freely within the organization, the negative effects of errors on occupational self-efficacy should be reduced. Based on these prior findings, the following was expected:

\[ H2: \text{There will be a significant interaction between error management culture and planning errors, such that the effect of planning errors on occupational self-efficacy will be stronger in a low error management culture than in a high error management culture.} \]

**Method**

**Participants**

The present study utilized Xavier University School of Psychology’s participant pool to acquire a sample of undergraduate students (see Appendix A for the study announcement). Participants who were at least 18 years old were recruited, and no restrictions based on gender or race were in place when recruiting participants. Following the completion of the study, each participant was awarded 15 minutes of research participation credit. A total of 262 participants participated in this study. Data collected from 39 participants were discarded because participants either did not complete the study in its entirety or they failed at least one of the two manipulation checks. This resulted in a final sample size of 223 participants.
Overall, the sample had an average age of 20.07 years ($SD = 3.66$ years) and consisted of primarily female students (77.6%), followed by males (22.0%) and students who preferred not to respond (0.4%). Regarding race/ethnicity, 82.1% reported they were White or Caucasian, 6.7% reported they were Black or African American, 3.6% reported they were Asian, 3.6% reported they were Hispanic or Latino, 1.8% reported they were biracial/multiracial, 0.4% reported their race/ethnicity as American Indian or Alaska Native, 0.4% reported race/ethnicity as Native Hawaiian or Other Pacific Islander, 0.4% reported “Other,” and 0.9% preferred not to respond. In regards to work history, 94.2% reported that they had been previously employed, and 56.5% reported they were currently employed at the time of data collection.

**Materials and Measures**

**Vignettes.** Each participant was randomly assigned to one of four vignettes about completing a project at a fictitious company. The vignettes were constructed using a 2 (planning error: present, not present) x 2 (error management culture: high, low) between-subjects factorial design. The first part of the vignette was consistent throughout all four vignettes and described how the participants’ boss had a project for them to complete, and they were asked to estimate the time needed to complete the project. The participants provided an estimate to their boss. The second part of the vignette contained the manipulations. In the planning error condition, the participant was described as making a planning error when completing the project, whereas in the no planning error condition, no error was made, and the project was completed on time. Consistent with van Dyck et al. (2005), the company was described as being open to errors and emphasized communication and learning from errors in the high error management culture condition,
whereas in the low error management culture condition, the company was described as not being open to errors and penalized the participant if an error was made. The vignettes in their entirety can be seen in Appendix B.

**Occupational self-efficacy.** The criterion measure for this study was the Occupational Self-Efficacy (OCCSEFF) scale (Schyns & von Collani, 2002). An adapted form of the OCCSEFF scale was used to measure occupational self-efficacy with regard to the scenarios depicted in the vignettes. Items were reworded to specify the focus and scope of the information that the participant was to draw from when responding to the items. The phrase “in such an environment” was added to the beginning of the items, and the tense of the items was changed from present to future tense to align with the scenario depicted in the vignette and the instructions, “evaluate your future performance in such an environment.” The 19 items were answered on a 5-point scale ranging from 1 (completely untrue) to 5 (completely true).

**Manipulation check items.** Participants were asked two manipulation check items regarding the manipulated components of the vignettes to ensure they carefully read and understood the vignette. An incorrect answer to either of these manipulation check items demonstrated low-quality responses, and the respondent’s data were not included in the study’s main analysis. The manipulation check items can be seen in Appendix C.

**Response quality items.** Following the manipulation check items, participants were asked three response quality items. These items were used to assess if participants experienced any technical issues, distractions, or confusion while completing the study. However, these items were only used for exploratory purposes, and all participants who
passed the two manipulation check items were included in the analyses. The response quality items can be seen in Appendix D.

**Demographics.** Each participant of the study was asked to indicate his or her age, gender, race/ethnicity, major in school, year in college, employment status, and work experience (see Appendix E).

**Procedure**

The present study was submitted to Xavier University’s Institutional Review Board (IRB) and received “Exempt” status (please see Appendix F for the IRB approval letter). Participants were asked to follow a web link to participate in the study. The study began by presenting the participants with the informed consent form (see Appendix G). After agreeing to participate, participants were randomly assigned to one of four conditions where they read a vignette about completing a project at a fictitious company. After reading the vignette, they responded to the OCCSEFF measure, manipulation check items, response quality items, and demographic items. After completing these items participants were directed to a separate survey where they were presented with a debriefing form (see Appendix H), were thanked for their participation in the study, and were allowed the opportunity to provide their identification information to receive research participation credit.

**Results**

A 2 x 2 between-subjects factorial analysis of variance (ANOVA) was utilized to examine both hypotheses. Results showed a significant main effect of planning errors on occupational self-efficacy, $F(1, 219) = 14.17, p < .001, \eta^2_p = .06$, such that occupational self-efficacy was lower in the planning errors condition ($M = 3.98, SD = 0.56$) than in the
no planning errors condition \((M = 4.24, SD = 0.44)\). This result provides support for Hypothesis 1, suggesting that planning errors have a negative effect on one’s occupational self-efficacy. There was no significant interaction between planning errors and error management culture on occupational self-efficacy, \(F(1, 219) = 1.40, p = .238, \eta^2_p = .01\). Therefore, Hypothesis 2 was not supported, and this finding suggests that error management culture did not play a significant role in reducing the observed negative effects of planning errors on occupational self-efficacy (see Table 1 for means and standard deviations by condition and Table 2 for the ANOVA results). Moreover, as expected, there was no significant main effect of error management culture on occupational self-efficacy, \(F(1, 219) = 1.03, p = .312, \eta^2_p = .01\). This result suggests that occupational self-efficacy levels did not significantly differ between the high error management culture condition \((M = 4.16, SD = 0.44)\) and the low error management culture condition \((M = 4.08, SD = 0.58)\).

**Discussion**

Hypothesis 1 examined the relationship between planning errors and occupational self-efficacy. Results showed a significant main effect of planning errors on occupational self-efficacy, such that occupational self-efficacy was lower in the planning errors condition than in the no planning errors condition. Therefore, Hypothesis 1 was supported. As previously stated, self-efficacy is influenced by mastery experiences (Bandura, 1977). When the employee in the scenario underestimated the time needed to complete the project, the employee’s mastery experience was likely negatively impacted, which reduced self-efficacy (Hardy, 2014).
*Hypothesis 2* proposed there would be a significant interaction between error management culture and planning errors on occupational self-efficacy. Results showed no significant interaction between planning errors and error management culture on occupational self-efficacy. Therefore, *Hypothesis 2* was not supported. A potential explanation for this lack of support can be attributed to the complexity of error management culture. Van Dyck et al. (2005) stated that “error management culture encompasses organizational practices related to communicating about errors, to sharing error knowledge, to helping in error situations, and to quickly detecting and handling errors” (p. 1229). Although this study attempted to depict these themes throughout the scenario, they probably did not provide participants with a thorough and complete understanding of these complex organizational behaviors. Furthermore, error management culture is demonstrated through a top-down approach in an organization, which was not thoroughly depicted in the scenarios used in this study.

**Theoretical and Practical Implications**

The results of the current study have a number of theoretical implications in the areas of planning errors, the planning fallacy, and occupational self-efficacy. First, these results add to the limited research on planning error consequences. As previously mentioned, former research has extensively explored the antecedents to planning errors (see Halkjelsvik & Jorgensen, 2012, for a review), but there is still limited research on the consequences of planning errors brought about by the planning fallacy. Additionally, these results provide greater insight into understanding how employees are affected by errors in the workplace and the negative effects that these errors can have on their self-belief in regards to their jobs. The current study also has theoretical implications for the
literature in regards to occupational self-efficacy, as these results provide additional
support for the use of the OCCSEFF scale and occupational self-efficacy in general by
demonstrating another application for the measure and expanding the literature on the
topic.

Results from the current study have practical implications for how organizations
may identify potentially at-risk employees and how to help employees to reduce and deal
with errors. Knowing that people who make planning errors report lower levels of
occupational self-efficacy, organizations, managers, practitioners, and employees should
look to minimize or reduce the likelihood that these errors will occur, which will likely
reduce the negative consequences brought about by experiencing planning errors. This
study also has practical implications for the use of the OCCSEFF scale in organizations.
Information gathered from using this measure can be helpful in determining who is in
need of additional training, resources, or coaching.

Limitations and Future Research Directions

As in any study, the present study had a few limitations. First, due to the methods
of this study, participants were able to access and complete the study in any location that
has access to the internet. The disadvantage to this method is that the experimenter was
unable to hold environmental variables constant. These issues may be addressed in future
studies by administering the study in a controlled environment. The next potential
limitation related to the student sample used in this study. Some disadvantages of
utilizing a student sample include issues related to the diversity of the sample and the
generalizability of the findings. However, the vignettes used in the study were designed
to present the participant with a scenario general enough that anyone who has had work
experience or has worked on a project should have been able to imagine himself or herself in the scenario. The use of vignettes in this study could also be considered a potential limitation. Due to the content of the scenarios described in the vignettes, there were minor inconsistencies across conditions. This potential concern was addressed by aligning the content of the manipulations to the definitions of the constructs, as defined in the literature.

Future research should explore if these results could be replicated or expanded in an organizational context. Furthermore, future research should continue to explore additional consequences of planning errors and other errors in the workplace and ways to reduce the negative effects of the errors when they do occur. Finally, future research should examine if these observed negative effects of planning errors on occupational self-efficacy can be seen in other kinds of errors.

**Conclusions**

In conclusion, the current study’s findings suggest that planning errors have a negative effect on one’s occupational self-efficacy. Organizations, managers, practitioners, and employees should consider the results of this study and should work to implement strategies to minimize or reduce the likelihood that these planning errors will occur in their organization. Future research should continue to explore additional consequences of planning errors and other errors in the workplace. Moreover, future research should further examine ways that organizations can reduce errors in their employees and ways to reduce the negative effects of the errors when they do occur.
References


Appendix A

Study Announcement

Future Performance in a Work Environment

Jacob Kuczmanski is conducting a study to examine future performance in a work environment.

You will be asked to read a short scenario and complete one short survey, lasting around 15 minutes. The study may be completed on any computer or tablet that has internet access. If you are interested in participating in this online study, please write down or tear off the URL at the bottom of this sheet.

Participants will receive **15 minutes** of research credit for participating in this study.

Thank you for your participation!

[Survey link was included here, as well as at the bottom of this sheet]
Appendix B

Vignettes

Participants were randomly assigned to one of four scenarios. The following is a sample scenario, and the sections that have a * in front of them signify the four different conditions. Bolded words indicate the exact manipulations. These words were not bolded in the vignettes presented to the participants.

You will now be asked to read a short scenario. Questions regarding the content of this scenario will be asked of you so please carefully read the following scenario and respond to items relating to your future performance in such an environment. By clicking “Next” you acknowledge that you understand that you will be asked questions regarding the content of the following scenario.

Imagine you are a current employee working at a hypothetical company, L.H.Z. Group, Inc. Your supervisor, Alex, calls you into his office and begins describing a new project he would like you to start working on. Even though Alex thoroughly describes the project and its objectives to you, he tells you to take the rest of the day to do some more research on the project and that he would like an estimate of how long you think the project will take you to complete. You indicate to Alex that you understand and you leave his office.

You return to your desk and thoroughly research the project for the remainder of the day. Before you leave the office, you decide on a length of time in which you think you can complete the project and email Alex with your final prediction:

“I have researched the project and I feel confident that I can complete the project in 7 weeks.”

You check your email when you arrive at your desk the next morning and see that Alex has replied to your email:

*Planning Error; Low Error Management Culture* “Thank you for your email and projected timeline. It is very important that you complete this project on time. There is no room for error in the proposed timeline.”

You understand the seriousness of the situation so you get to work. The project begins as planned and everything runs smoothly the first two weeks. During the third week, you experience a series of small setbacks which delays your progress. The fourth and fifth weeks go as expected but you are still behind because of the setbacks in week three. Then, you had a major setback in week six that forces you to push the projected completion date back.

At the beginning of the seventh week, Alex calls you into his office and asks for a status update on the project because he knows that it is due at the end of the week. You explain the current state of the project to Alex and tell him that you will not be able to complete
the project by the end of the week as promised. Alex responds by issuing you a formal performance warning.

You finally complete the project after 9 weeks of working on it, two weeks after your projected completion date.

After presenting the completed project to Alex, he tells you that errors are not an option in a project such as this and he is displeased that you did not complete the project on time.

Alex is interested in how you will perform in the future, so he asks you to complete a survey to evaluate your future performance in such an environment.

*Planning Error; High Error Management Culture* “Thank you for your email and projected timeline. Although it is very important that you complete this project on time, there is room for error in the proposed timeline.”

You understand the seriousness of the situation so you get to work. The project begins as planned and everything runs smoothly the first two weeks. During the third week, you experience a series of small setbacks which delays your progress. The fourth and fifth weeks go as expected but you are still behind because of the setbacks in week three. Then, you had a major setback in week six that assured you that you would not complete the project by the projected completion date.

At the beginning of the seventh week, Alex calls you into his office and asks for a status update on the project because he knows that it is due at the end of the week. You explain the current state of the project to Alex and tell him that you will not be able to complete the project by the end of the week as promised. Alex responds by asking you to write a report on why the project has overrun your projected completion date and what you have learned from the experience. You are also asked to send this report out to three of your co-workers that would benefit from this knowledge.

You finally complete the project after 9 weeks of working on it, two weeks after your projected completion date.

After presenting the completed project to Alex, he tells you that errors were likely to occur in a project such as this and that it is okay that you did not complete the project on time, as long as you learned from the experience.

Alex is interested in how you will perform in the future, so he asks you to complete a survey to evaluate your future performance in such an environment.

*No Planning Error; Low Error Management Culture* “Thank you for your email and projected timeline. It is very important that you complete this project on time. There is no room for error in the proposed timeline.”
You understand the seriousness of the situation so you get to work. The project begins as planned and everything runs smoothly the first two weeks. **During the third week, you experience no setbacks that delay your progress.** The fourth and fifth weeks go as expected. Then, you had a major breakthrough in week six that assured you that you would complete the project by the projected completion date.

At the beginning of the seventh week, Alex calls you into his office and asks for a status update on the project because he knows that it is due at the end of the week. You explain the current state of the project to Alex and tell him that you will be able to complete the project by the end of the week as promised.

You finally complete the project after 7 weeks of working on it, on your projected completion date.

After presenting the completed project to Alex, he tells you that **errors are not an option in a project such as this so he is pleased** that you completed the project on time.

Alex is interested in how you will perform in the future, so he asks you to complete a survey to evaluate your future performance in such an environment.

*No Planning Error; High Error Management Culture* “Thank you for your email and projected timeline. **Although** it is very important that you complete this project on time, **there is room for error** in the proposed timeline.”

You understand the seriousness of the situation so you get to work. The project begins as planned and everything runs smoothly the first two weeks. **During the third week, you experience no setbacks that delay your progress.** The fourth and fifth weeks go as expected. Then, you had a major breakthrough in week six that assured you that you would complete the project by the projected completion date.

At the beginning of the seventh week, Alex calls you into his office and asks for a status update on the project because he knows that it is due at the end of the week. You explain the current state of the project to Alex and tell him that you will be able to complete the project by the end of the week as promised.

You finally complete the project after 7 weeks of working on it, on your projected completion date.

After presenting the completed project to Alex, he tells you that **errors were likely to occur in a project such as this but he is pleased** that you completed the project on time. **Additionally, he says that even if errors were made, it would have been okay as long as you learned from the experience.**

Alex is interested in how you will perform in the future, so he asks you to complete a survey to evaluate your future performance in such an environment.
Appendix C

Manipulation Check Items

Please answer the following questions regarding the scenario that you read.

1. In this scenario, did the company allow any room for error in your estimation of how long the project would take?
   - Yes
   - No

2. In this scenario, did you complete the project on time?
   - Yes
   - No
Appendix D

Response Quality Items

Did you experience any technical difficulties while taking this study (e.g., erroneous clicks, page loading or internet connection issues, etc.)? If so, please describe what you had trouble with.

• No
• Yes
• ____________

While you were completing this survey, did you have any major distractions (e.g., interruptions by other people, phone calls, etc.)? If so, please describe the distraction.

• No
• Yes
• ____________

Was any part of this study unclear to you in any way? If so, please describe what was confusing to you.

• No
• Yes
• ____________
Appendix E

Demographic Items

Please answer the following demographic questions. This information will not be used for identification purposes and will only be reported on an aggregated basis.

Age _____

Gender

- Male
- Female
- Other _____
- Prefer not to respond

Race/Ethnicity

- White or Caucasian
- Black or African American
- American Indian or Alaska Native
- Asian
- Native Hawaiian or Other Pacific Islander
- Hispanic or Latino
- Biracial/Multiracial
- Other _____
- Prefer not to respond

Major in College _____

Year in College

- First-year
- Sophomore
- Junior
- Senior
- Other _____

Have you ever been employed?

- Yes
- No

Are you currently employed?

- Yes, employed full-time
- Yes, employed part-time
- No
Overall work experience, including both past and present employment (if applicable); please state if your answer is in months or years by writing either the word “months” or “years” after the number you provide: ______________
Appendix F

IRB Approval Letter

September 8, 2015

Jacob Kuczmanski

Re: Protocol #15-023, The Effects of the Planning Fallacy and Organizational Error Management Culture on Occupational Self-Efficacy

Dear Mr. Kuczmanski:

The IRB has reviewed the materials regarding your study, referenced above, and has determined that it meets the criteria for the Exempt from Review category under Federal Regulation 45CFR46. Your protocol is approved as exempt research, and therefore requires no further oversight by the IRB. We appreciate your thorough treatment of the issues raised and your timely response.

If you wish to modify your study, including the addition of data collection sites, it will be necessary to obtain IRB approval prior to implementing the modification. If any adverse events occur, please notify the IRB immediately.

Please contact our office if you have any questions. We wish you success with your project!

Sincerely,

Morell E. Mullins, Jr., Ph.D.
Chair, Institutional Review Board
Xavier University

MEM/sb
Appendix G

Informed Consent Form

You are being asked to participate in a thesis project conducted by Jacob Kuczmanski at Xavier University. The purpose of this study is to investigate future performance in a work environment.

In this study, you will read a short scenario, you will be asked to imagine yourself in the scenario, and you will be asked to answer questions based on your performance described in the scenario. You will also be asked to complete some additional measures and demographic items. The total time to complete this task is approximately 15 minutes. Therefore, you will receive 15 minutes of research credit by participating in this study and completing the entire survey.

There are no known risks associated with this study. Participation in this study is entirely voluntary. Refusal to participate in this study will have no effect on any future services you may be entitled to from Xavier University. You are free to withdraw from the study at any time without penalty. You have to be at least 18 years old to participate in this study.

All data analyses will be conducted at the group level and your responses will remain anonymous. You will need to provide identifying information in order to receive research participation credit, but this will be done in a separate survey so your responses and identifying information cannot be cross-referenced. Therefore, no identifying information will be associated with your responses. Finally, only the researchers conducting this study will have access to your responses.

If you have any questions at any time during the study, you may contact the principal investigator, Jacob Kuczmanski at kuczmanskij@xavier.edu, or the faculty advisor, Dr. Dalia Diab at diabd@xavier.edu. Questions about your rights as a research subject should be directed to Xavier University’s Institutional Review Board at 513-745-2870.

By clicking “Next,” you agree to the following statement: I have been given information about this research study and its risks and benefits and have had the opportunity to ask questions and to have my questions answered to my satisfaction. I freely give my consent to participate in this research project.
Appendix H

Debriefing Form

Thank you for participating in our research project. The purpose of this study is to investigate the effects of planning errors and organizational culture on occupational self-efficacy. You were randomly assigned to one of four scenarios, representing the four conditions (planning error: present, not present; error management culture: high, low). The company and scenarios used in this study are fictitious.

Please do not discuss the specifics of our study with anyone or distribute this form to any potential participants, as data collection is ongoing. If you have any questions or concerns, or if you would like to inquire about the results of this study, please contact the principal investigator, Jacob Kuczmanski at kuczmanskij@xavier.edu, or the faculty advisor, Dr. Dalia Diab at diabd@xavier.edu.