8-6-2011

Predicting Technology Related Performance: Where Self-Prophecy and Computer Self-Efficacy Meet

Phil Longstreet
Washington State University, phillong@umflint.edu

Xiao Xiao
Washington State University, xiao_xiao@wsu.edu

Saonee Sarker
Washington State University, ssarker@wsu.edu

Dave Sprott
Washington State University, dsprott@wsu.edu

Predicting Technology Related Task Performance: Where Self-Prophecy and Computer Self-Efficacy Meet

Phil Longstreet
Washington State University
plongstreet@wsu.edu

Xiao Xiao
Washington State University
xiao_xiao@wsu.edu

Saonee Sarker
Washington State University
ssarker@wsu.edu

Dave Sprott
Washington State University
dsprott@wsu.edu

ABSTRACT

Computer Self-Efficacy (CSE) has been traditionally viewed within the IS discipline as an important factor contributing to enhancements in computer-related task performance. Despite these acknowledgements, however, the empirical results involving the effect of CSE on performance have not always been consistent. Further, increasing an individual's CSE is also a cumbersome process from a practical perspective of implementation. In this study, we introduce a new construct, self-prophecy (from the consumer psychology literature), and investigate whether this social influence strategy can be used as a mechanism to improve computer-related task performance. An experimental study was conducted to examine the effects of self-prophecy in enhancing computer-related task performance. Results show that self-prophecy and CSE interact to influence technology-related task performance. Implications of these results are discussed in terms of organizations ability to increase performance with self-prophecy versus influencing individuals' CSE.

Keywords:

Self-Prophecy; Computer Self-Efficacy; Individual Performance; Task performance

INTRODUCTION

The Information Systems field has shown a deep enduring interest in efforts to predict and enhance individuals' performance on computer related tasks. This is evident in models such as the Technology Acceptance Model (F. D. Davis, Bagozzi, & Warshaw, 1989) where researchers were seeking to understand the motivational factors leading to technology acceptance, and the Task Technology Fit Model (Goodhue & Thompson, 1995) which articulated the relationships between task, technology and individual characteristics in relation to task performance. Finally, Computer Self-Efficacy (Compeau & Higgins, 1995a) significantly predicted individuals' performance on technology-related tasks, and further showed that performance increases on a technology-related task requires additional training to enhance an individual's Self-Efficacy. The ability of Computer Self-Efficacy (CSE) to predict performance has not yet been fully explained, however, as prior research has shown that CSE can exhibit contradictory results (Marakas, Yi, & Johnson, 1998; Compeau & Higgins, 1995b; Compeau, Gravill, Haggerty, & Kelley, 2006). For example, the research reported by Compeau, Higgins and Huff (1999) is an instance where contradictory results were demonstrated within the CSE domain. Thatcher, Zimmer, Gundlach, and McKnight (2008) suggested that the cause of these results may be explained by treating CSE as a multifaceted construct. The results of their analysis showed support for treating CSE as multifaceted construct, but they note that additional research is needed to explicate how each of the facets interacts to influence behavioral intentions and task performance (Thatcher et al., 2008). Even with this multifaceted model, however, equivocal findings still exist in the CSE literature, which suggests that additional models or moderating variables may be necessary to fully understand the nature and impact of the concept. To summarize, the ability of CSE to accurately predict performance is still somewhat ambiguous suggesting that it might be beneficial to examine other constructs relevant to such domains.

Examining the consumer psychology literature, it becomes quickly apparent that the Information Systems field is not alone in its desire to predict and influence individuals' performance of a focal behavior. While much research in marketing and consumer behavior seeks to influence behavioral performance, of interest to the current work is a phenomena whereby behavior is changed by simply asking people to make an a priori prediction about performing the behavior (Sherman, 1980). Often referred to as self-prophecy (SP; other researchers have called this the mere-measurement effect or more recently the question-behavior effect; for a detailed discussion of these streams see (Sprott et al., 2006), the effect has been shown to influence a variety of different behaviors, including: recycling (Spangenberg, Sprott, Grohmann, & Smith, 2003; Sprott, Spangenberg, & Perkins, 1999), commitment to health and fitness (Spangenberg et al., 2003; Sprott, Smith, Spangenberg, & Freson, 2004), cheating (Spangenberg & Obermiller, 1996), choosing healthy snacks (Sprott, Spangenberg, & Fisher, 2003), and gender stereotyping (Spangenberg & Greenwald, 1999), to name only a few. In all these demonstrations, the self-prophecy effects influences behavior in the direction of social norms (Sprott et al., 2006).

While previous research has shown strong support for the effect of self-prediction on the performance of various behaviors, to-date, no research has tested the effectiveness of self-prophecy within the context of a technology related task. Self-prophecy is particularly interesting for IS researchers because it suggests that the performance on a technology-based task might be enhanced by simply having a person or group predict their future performance of specific behaviors. If this is the case, then enhancing the performance of technology-based tasks would not necessitate the additional (and expensive) training as required for by a mechanism based on CSE; instead, changes in behavior could be achieved by asking a simple question of someone. Thus, our objective in this paper is to examine the effect of SP in technology-related behaviors. Specifically, the study attempts to make an important contribution to IS literature by examining whether the SP effect can both predict and enhance performance within the context of a technology-related task. A secondary objective of the study is to explore how SP and CSE may be able to complement one another, and more fully explain the variance in task performance.

The remainder of this article is structured as follows. Next, the CSE and SP concepts are more fully explicated in a literature review. This review leads into a discussion of the research objectives. A program of research is then established and an experiment is reported that evaluates our research objectives. Finally, the article concludes with a discussion of the results, and limitations of this research.

LITERATURE REVIEW

Computer Self-Efficacy

The concept of Self-Efficacy, the expectation of one's own ability to perform a behavior, is derived from the Social Cognitive Theory. Social Cognitive Theory, first introduced by Bandura (1986) identified two sets of expectations as the major cognitive forces guiding behavior. The first set of expectations, outcome expectations, have been a primary interest for researchers interested in technology acceptance literature and as such, have been well articulated in the field by research into TAM (F. D. Davis et al., 1989; Venkatesh & F. D. Davis, 2000; Venkatesh, Morris, G. B. Davis, & F. D. Davis, 2003), and TTF (Goodhue & Thompson, 1995). Self-efficacy, on the other hand, had received little attention in the IS field until

Compeau and Higgins (1995a) proposed their concept of Computer Self-Efficacy. In their 1995 article, Compeau and Higgins adapted the theory of Self-Efficacy to be more relevant for technology and introduced the theory into the IS field. They define CSE as "… a judgment of one's capability to use a computer" (Compeau & Higgins, 1995a, p. 192). Compeau and Higgins state that, CSE focuses on how confident people are about what could be done in the future, and more specifically about one's capabilities to perform broader computer related tasks. To validate and test the CSE concept, Compeau and Higgins (1995a) developed a ten-item measurement of CSE, which has subsequently been widely used in CSE research. Thatcher et al. (2008) further expanded upon the CSE instrument by identifying two sub-dimensions within the instrument, external and internal CSE.

Since the introduction of the CSE concept, many researchers have followed the lead of Compeau and Higgins to study the effect of CSE on individual task performance; however, research results in this area are often equivocal or contradictory (Marakas et al., 1998). For instance, Compeau and Higgins (1995b) show in their 1995 study that CSE significantly relates to task performance in some groups but not in others. Further, even when CSE is shown to be significant in relation to task performance, the question then becomes one of how to increase performance on the task. Previous literature seeking to answer this question has shown several determinants that can influence task performance including outside support, training and verbal persuasion (Marakas et al., 1998), but research has also shown that these determinants have not always provided the anticipated results. An example of this was provided by Thatcher et al. (2008), when they showed that, contrary to initial expectations organizational support was found to be negatively associated with CSE (Compeau & Higgins, 1995a). Even when disregarding these equivocal findings from manipulation of one or more the determinants, in practice it is usually cumbersome and expensive to rely on training or other methods for improving task performance. To address these issues with CSE, this paper focuses on the concept of self-prophecy. Self-prophecy is a theory from the marketing literature that has been robustly supported as an effective method to predict and enhance human behavior. Introduction of this concept into the IS field will provide a well-supported model for predicting task performance, and suggests an alternative for enhancing task performance.

Self-Prophecy

The self-prophecy effect was first introduced in an article by Sherman (1980; then referred to as the self-erasing nature of errors of prediction), who showed that people usually mispredict the degree to which they will perform a socially desirable behavior, but that such prediction errors tend to be self-erasing when the behavior is later performed. In essence, this means that if a person predicts that they will perform a behavior, there will be a greater propensity for them to actually perform the behavior in the future, than if they had not made such a prediction. Sherman (1980), conducted three experiments to test this basic hypothesis involving the behavior of writing a counter-attitudinal essay, singing the "Star Spangled Banner" over the telephone and volunteering 3 hours to collect money for American Cancer Society. In all three experiments, there was a discrepancy between the percentages of people in the prediction-only group who predicted they would perform a behavior and the percentages of people in the request-only group who actually performed the behavior. The experiments also showed that once people had made a self-prediction (compared to those who made no prediction) that performance of the behavior was biased in a socially normative direction (e.g. people making a prediction were less likely to sing over the phone and more likely to volunteer to collect money). Since that time, researchers have demonstrated this later effect on the performance of other behaviors. For example, Greenwald, Carnot, Beach, & Young (1987) found that people were more likely to register to vote, and actually vote, if they were asked to predict their behaviors a priori. Spangenberg and Obermiller (1996) also demonstrated that a self-prediction can reduce cheating behavior in a college classroom by asking students to predict if they would cheat on an upcoming assignment. As noted previously, self-prophecy research has consistently demonstrated the effects of self-prediction on behavior to be in a socially normative direction (Sprott et al., 2006).

More recently, researchers in the field of Marketing have shown self-prophecy to influence a range of consumer behaviors (e.g. Sprott et al., 1999). For example, Spangenberg (1997) examined SP in the context of a customer service and found that answering an anonymous prediction question lead to an increase in the likelihood of actually attending a health club. This research provides the earliest demonstration of how the effect of SP can be used in a real-world setting. Since that time, a significant amount of research has been conducted showing that SP has an effect on various socially desirable consumer behaviors, including recycling (Spangenberg et al., 2003; Sprott et al., 1999), choice of low-fat snacks (Sprott et al., 2003), having a health assessment (Sprott et al., 2004), and attending fitness center (Spangenberg et al., 2003). Research has also begun to identify possible boundary conditions for the effect, including for example Spangenberg and Sprott's (2006) findings that SP has stronger effects for people who are lower in self-monitoring, vis-a-vis those who are higher in self-monitoring.

RESEARCH QUESTIONS

Prior research has shown that when people predict that they will perform well on a task, they will be motivated to act in the way that is consistent with their prediction (Sherman, 1980; Ryan & Deci, 2000; Ajzen & Fishbein, 1973). Based on this prior evidence, it is expected that subjects' who have predicted that they will do well in a technology related task will subsequently perform better than those subjects who don't make a prediction or predict that they will perform poorly on the task. Therefore, the first research question is: *Does SP significantly influence individuals' future performance of a behavior in the context of a technologically related task*?

This research also seeks to explore the nature of the relationship between SP and CSE pertaining to task performance. Provided that there is a significant interaction this could indicate that using SP and CSE conjointly will provide an additional benefit for the prediction and enhancement of task performance. Therefore, the second research question is: *Do SP and CSE interact to influence task performance, and if so what is the nature of this interaction?*

RESEARCH METHOD

To explore the effectiveness of the SP construct within the technological context, we designed and conducted an experiment using student subjects. While students may not always be the ideal subject base as their use has been criticized because of a limited knowledge base (e.g. Sears, 1986), for this study this population is appropriate given that we wanted to use a population that did not have prior exposure to the types of applications that we are focusing upon in this study (Kardes, 1996).

Subjects

Approximately 152 students were recruited from an introductory Information Systems course at a large northwestern university. Subjects varied in age from 18 to 38, with a mean age of 20.5. In terms of gender, 65% of the subjects were male, with the remaining 35% being female. As this course is required for the College of Business, subjects were recruited from various majors within the college, with an additional small percentage enrolled from outside the college. Subjects were given course credit for their participation in this research study with no other incentives provided.

Experiment Procedure

The experimental setting surrounded a hypothetical summer internship in order to make the study more realistic for the student subjects. The subjects were asked to imagine that they had been hired as a summer intern for an architecture firm, and that their job would be to determine the best architecture software application for the company to purchase when the company's current architecture software license expired later in the summer.

To evaluate the proposed research questions, data were collected from three randomly assigned groups. The first two groups made a self-prediction as to whether they would make a good decision about the software and completed a survey about their degree of CSE (adapted from the CSE instrument used by Compeau and Higgins (1995a). The only difference between these groups was the order in which the self-prediction was made (either before or after the CSE measure). The third group served as a control and was given neither the self-prediction nor the CSE measure.

For all groups during the remainder of the experiment, subjects were confronted with a situation wherein they needed to determine which of the software applications met the technical requirements for the company. To accomplish this task, they were given a list of the company's computers, access to websites containing information about the software packages and a conversion chart. After reviewing the relevant information for the company's hardware and the technical requirements for each of the architectural software packages, the subjects were asked to provide their recommendation as to which software would be appropriate for the company given the company's current hardware configuration.

Measurement

Dependent Variable

There are basic three ways to measure individual task performance: task correctness, amount of time needed to perform a task, and after-task recollection (Lee, Suh, & Benbasat, 2001). In this study, task correctness was used as the dependent variable and was measured by asking the subjects to choose just one of two competing architectural software applications. Based on the materials presented to the research participants, only one of the software applications met the technical requirements for the hypothetical architecture company that they were working at for their summer internship.

Independent Variables

Previous literature manipulated SP by simply asking subjects to make a self-prediction regarding the behavior (Greenwald et al., 1987). Following this approach, the SP manipulation was presented as a dichotomous question asking subjects to predict whether they believed that they would perform well on the task in this study (see appendix). This decision was then coded as a "1" for those who believed they would do well on the task and "0 for those who believed that they would not do well.

CSE was adapted from the popular, normative Compeau and Higgins (1995a) instrument, and was subsequently coded and analyzed in a similar fashion (see appendix). For this study, subjects were asked to perform a double rating of the CSE question. First, subjects answered the question with a dichotomous choice (yes/no), and then rated the strength of that choice on a 7-point Likert-type scale. For the purposes of analysis, the strength of the no response was then disregarded, and a "0" was substituted. This was primarily to remove any bias introduced by rating the strength of a dichotomous choice. Finally, the overall degree of CSE was calculated by averaging the scores across the 10-item instrument.

Control Variables

Prior research has shown that decision confidence can play a significant role in task performance (Sieck W. & Yates J.F., 1997). As such, data were collected in the post survey instrument to ascertain subjects' level of confidence. The instrument was adapted from a previously validated measure (2001). IT knowledge has also been shown to explain significant variation in task performance, and as such, an adapted IT knowledge instrument from Bassellier, Benbasat and Reich (2003) was collected. This measure was included in the post survey instrument to avoid confounding influences. In addition to IT knowledge and decision confidence, gender (has also been shown to be potential confounding influence; Busch, 1995) was also controlled for in this study

The reliability of the measurement instruments for CSE, DC, and ITK were all within or near the suggested threshold of 0.80 (J. Cohen, P. Cohen, West, & Aiken, 1983). Therefore, the Cronbach's Alpha scores for CSE (0.879), DC (0.852), ITK (0.787) are all shown as being highly reliable as expected due to the use of previously validated instruments (Compeau et al., 2006; Bearden et al., 2001; Bassellier et al., 2003).

Data Analysis

The data were initially analyzed using a one-way ANOVA to test for significant differences in task performance between the treatment groups and the control group. Results from this ANOVA analysis revealed no significant difference ($F=0.211$, $p=0.405$). Based on these findings, the data from the treatment groups was collapsed to just one group for the remainder of the analysis.

Due to the exploratory nature of this research and the presence of binary indicators, hierarchical logistic regression was employed to tease out the interaction between SP and CSE. Table 1 shows the results of the analysis of the interaction between CSE and SP (Model 2).

From these results, Model 2 shows that SP does not exhibit a significant effect on the task performance ($p= 0.227$), while CSE did have a significant influence on task performance ($p= 0.018$). The interesting result shown in this model, however, is the significant interaction between CSE and SP, $p=0.041$. Model 2 also shows a significant change in R^2 ($p= 0.018$) thus indicating that the inclusion of the interaction provides the ability to significantly explain a degree of the variance in the underlying model (Model significance, $p<0.05$). Finally, while it has been suggested that IT knowledge, decision confidence and gender may influence task performance, the results of this study demonstrated that none of these control variables exhibited a significant influence on performance.

Variables	Models		
	Model 0	Model 1	Model2
SP		1.488	0.533
CSE		1.246*	2.706*
SP×CSE			0.429*
DC	0.750	0.848	0.813
ITK	1.168	0.94	0.914
Gender	0.684	0.651	0.627
R^2	0.030	0.079	0.114*
ΔR^2		0.056	0.035*
*: p< 0.05 Model 0: Only control variables are included Model 1: IVs are added Model 2: Interaction is added			

Table 1: Logistic Regression Analysis (N= 152)

To explore the interaction between SP and CSE (Model 2) more fully, the data were split into two groups using the SP scores. For this analysis, logistic regression was again employed to analyze performance in relation to CSE for subjects that indicated they would or would not perform well on the task. The results, presented in Table 2, show that CSE has a significant effect on task performance when SP equals "0" (p=0.026, n=32). For the other group, however, where SP equals "1" (n=120), CSE was shown not to have a significant effect on task performance.

Variables	SP	
	SP= 0	SP =1
CSE	6.823*	1.150
DC	0.694	0.834
ITK	0.125	0.990
Gender	0.056	0.737
* p< 0.05		

Table 2: Interaction Model

DISCUSSION AND POTENTIAL CONTRIBUTION

The results of this study found no main effects for self-prophecy or CSE on task performance associated with selecting a software application. While these results stand somewhat in contrast to prior research, the current study did demonstrate a significant interaction between these two constructs on task performance. This interaction provides support for the supposition that SP has a moderating influence on the effects of CSE. In particular, while there is a strong effect of CSE on task performance when subjects predicted that they would not do well on the task, the effect of CSE disappeared when individuals predicted that they would do well on the task. Thus, an affirmative self-prediction eliminated any effects of CSE.

In terms of self-prophecy research, the findings of this study are somewhat unique. The majority of prior SP research has only examined the effects of responding to a self-prediction and not the nature of that response. In contrast, the current research is one of the few studies that has shown that the nature of the self-prediction itself (i.e., whether the person said they would do well or not do well on the task) can influence future performance of a behavior. Future research could usefully

build upon these findings by more fully exploring how the nature of a prediction (not simply making a prediction) influences behavior.

This research also contributes to the field of Information Systems by demonstrating that when utilizing SP in combination with CSE, it is possible to highlight those subjects who would benefit the most from additional training. Traditionally, a company could rate the CSE of an employee and then try to increase that CSE level through training. Based on the current work, utilizing a self-prediction in combination with CSE, companies can now see that increasing CSE may only be relevant for those employees who believe that they will not do well on a task. For those individuals who believe that they will do well, a different approach will need to be employed to determine if additional training will be beneficial.

As suggested, utilizing these two concepts in combination has the potential to yield significant cost savings for industry through providing a new opportunity for the prediction and enhancement of task performance, while minimizing the amount of additional training required for technical tasks.

LIMITATIONS

The primary limitation of this study is that it utilized a cross sectional design at a specific point in time. This provided us with the capability to detect the influence of the SP construct, but does not provide the opportunity to see how performance changes over time based on introduction of the SP effect. Future studies should endeavor to study the effect of SP over time. An additional limitation of this study is introduced by the use of a binary outcome variable (i.e. picking the correct software choice). This provided a greater opportunity for subjects to guess the correct answer, which undoubtedly introduced a degree of noise into the analysis of the dataset. To alleviate the potential confounding influence of guessing, most previous research on CSE has used a continuous outcome variable. However, this study was intentionally limited to a binary outcome measure because the SP construct had never been studied within a technological context, and it has traditionally employed a binary outcome variable. The use of a binary outcome measure allowed the researchers to obtain a larger sample size for the overall study by limiting the amount of time required to complete the study, and therefore increased the likelihood of detecting an effect.

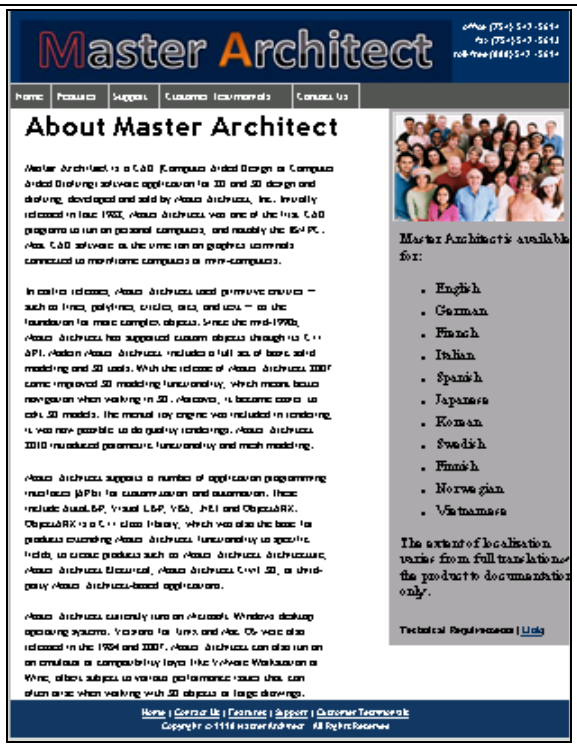
Finally, the study is also limited due to the use of student subjects. This use of student subjects limits the generalizability of the overall study as the student subjects are a homogenous sample with limited industry experience. In an exploratory study such as this, however, the use of student subjects was appropriate because if the effect was apparent within this limited sample set, then it is likely that other sample sets will also conform to the SP effect.

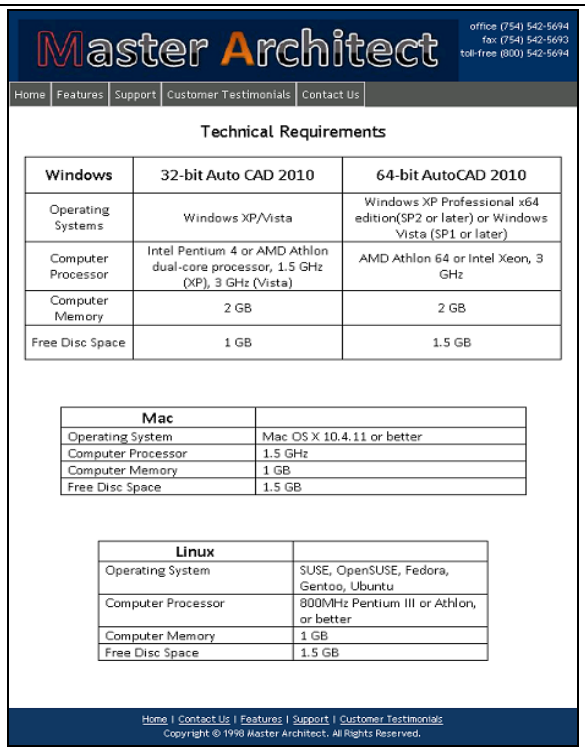
CONCLUSION

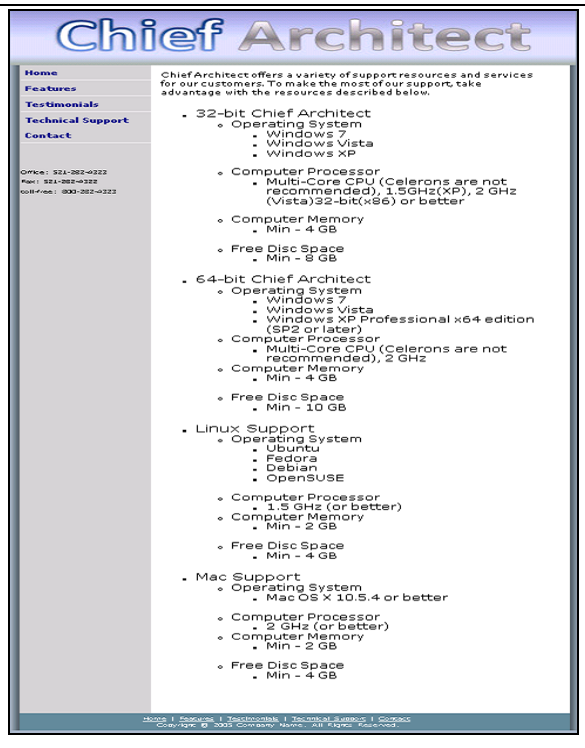
As with any research, the results of this study are not all encompassing. The results indicate that using CSE in conjunction with SP may be beneficial for improving task performance. This study further suggests that by utilizing both of these models industry may be able to realize costs savings through a decreased need for training. For academia, the results from this research show that future research into CSE could benefit by incorporating the SP effect into the research agenda. Utilizing self-predictions in conjunction with CSE for research endeavors is likely to provide more robust results that have a greater degree of explanatory power. For industry, the results from this research show that utilizing SP in conjunction with CSE will allow companies to target training to those specific employees that will benefit the most from it.

APPENDIX:

Website Mockups







Self-Prophecy Instrument

Based on the information you have, you predict that:

- ○ … you will not make a good decision about which product to purchase
- ○ … you will make a good decision about which product to purchase

Computer Self Efficacy Instrument

Based on the information I have, I could compare the two blueprint software packages and make the proper choice for my company if …

	Yes/no	Scale Item									
		Not at All Confident 1	2	3	4	5	6	7	8	9	Totally Confident 10
…. there was no one around to tell me what to do as I go.		○	○	○	○	○	○	○	○	○	○
…. I had never used a package like it before.		○	○	○	○	○	○	○	○	○	○
…. I had only the software manuals for reference.		○	○	○	○	○	○	○	○	○	○
…. I had seen someone else using it before trying it myself.		○	○	○	○	○	○	○	○	○	○
…. I could call someone for help if I got stuck.		○	○	○	○	○	○	○	○	○	○
….someone else helped me get started.		○	○	○	○	○	○	○	○	○	○
…. I had a lot of time to complete the task for which the software was provided.		○	○	○	○	○	○	○	○	○	○
….I had just the built-in help facility for assistance.		○	○	○	○	○	○	○	○	○	○
….someone showed me how to do it first.		○	○	○	○	○	○	○	○	○	○
…. I had used similar packages like this one before to perform a task.		○	○	○	○	○	○	○	○	○	○
		Not at All Confident 1	2	3	4	5	6	7	8	9	Totally Confident 10

REFERENCES

1. Ajzen, I., & Fishbein, M. (1973). Attitudinal and Normative Variables as Predictors of Specific Behavior. *Journal of Personality and Social Psychology*, *27*(1), 41-57.
2. Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, N.J.: Prentice-Hall.
3. Bassellier, G., Benbasat, I., & Reich, B. H. (2003). The Influence of Business Managers' IT Competence on Championing It. *Information Systems Research*, *14*(4), 317–336.
4. Bearden, W., Hardesty, D., & Rose, R. (2001). Consumer Self-confidence: Refinements in Conceptualization and Measurement. *Journal of Consumer Research*, *28*(1), 121-134.
5. Busch, T. (1995). Gender Differences in Self-Efficacy and Attitudes Toward Computers. *Journal of Educational Computing Research*, *12*(2), 147-158.
6. Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (1983). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. Erlbaum Hillsdale, NJ.
7. Compeau, D., Gravill, J., Haggerty, N., & Kelley, H. (2006). Computer Self-Efficacy: A Review. (P. Zhang & D. Galletta, Eds.)*Human-Computer Interaction in Management Information Systems: Foundations*, *5*.
8. Compeau, D., Higgins, C. A., & Huff, S. (1999). Social Cognitive Theory and Individual Reactions to Computing Technology: A Longitudinal Study. *MIS Quarterly*, *23*(2), 145-158.
9. Compeau, D. R., & Higgins, C. A. (1995a). Computer Self-Efficacy: Development of a Measure and Initial Test. *MIS Quarterly*, *19*(2), 189-211.
10. Compeau, D. R., & Higgins, C. A. (1995b). Application of Social Cognitive Theory to Training for Computer Skills. *Information Systems Research*, *6*(2), 118-143.
11. Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, *35*(8), 982-1003.
12. Goodhue, D. L., & Thompson, R. L. (1995). Task-Technology Fit and Individual Performance. *MIS Quarterly*, *19*(2), 213-236.
13. Greenwald, A. G., Carnot, C. G., Beach, R., & Young, B. (1987). Increasing Voting Behavior by Asking People If They Expect to Vote. *Journal of Applied Psychology*, *72*(2), 315–318.
14. Kardes, F. R. (1996). In Defense of Experimental Consumer Psychology. *Journal of Consumer Psychology*, *5*(3), 279-296.
15. Lee, H. K., Suh, K. S., & Benbasat, I. (2001). Effects of Task-Modality Fit on User Performance. *Decision Support Systems*, *32*(1), 27–40.
16. Marakas, G. M., Yi, M. Y., & Johnson, R. D. (1998). The Multilevel and Multifaceted Character of Computer Self-Efficacy: Toward Clarification of the Construct and an Integrative Framework for Research. *Information Systems Research*, *9*(2), 126-163.
17. Ryan, R. M., & Deci, E. L. (2000). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology*, *25*(1), 54-67.
18. Sears, D. O. (1986). College Sophomores in the Laboratory: Influences of a Narrow Data Base on Social Psychology's View of Human Nature. *Journal of Personality and Social Psychology*, *51*(3), 515–530.
19. Sherman, S. J. (1980). On the Self-Erasing Nature of Errors of Prediction. *Journal of Personality and Social Psychology*, *39*(2), 211–221.
20. Sieck W., & Yates J.F. (1997). Exposition Effects on Decision Making: Choice and Confidence in Choice. *Organizational Behavior and Human Decision Processes*, *70*, 207-219.
21. Spangenberg, E. R. (1997). Increasing Health Club Attendance Through Self-Prophecy. *Marketing Letters*, *8*(1), 23-31.
22. Spangenberg, E. R., & Greenwald, A. G. (1999). Social Influence by Requesting Self-Prophecy. *Journal of Consumer Psychology*, *8*(1), 61-89.
23. Spangenberg, E. R., & Obermiller, C. (1996). To Cheat or Not to Cheat: Reducing Cheating by Requesting Self-Prophecy. *Marketing Education Review*, *6*(3), 95–103.
24. Spangenberg, E. R., & Sprott, D. E. (2006). Self-Monitoring and Susceptibility to the Influence of Self-Prophecy. *Journal of Consumer Research*, *32*(4), 550-556.
25. Spangenberg, E. R., Sprott, D. E., Grohmann, B., & Smith, R. J. (2003). Mass-Communicated Prediction Requests: Practical Application and a Cognitive Dissonance Explanation for Self-Prophecy. *Journal of Marketing*, *67*(3), 47-62.

26. Sprott, D. E., Spangenberg, E. R., Block, L. G., Fitzsimons, G. J., Morwitz, V. G., & Williams, P. (2006). The Question–behavior Effect: What We Know and Where We Go from Here. *Social Influence*, *1*(2), 128 - 137.
27. Sprott, D. E., Smith, R. J., Spangenberg, E. R., & Freson, T. S. (2004). Specificity of Prediction Requests: Evidence for the Differential Effects of Self-Prophecy on Commitment to a Health Assessment. *Journal of Applied Social Psychology*, *34*(6), 1176-1190.
28. Sprott, D. E., Spangenberg, E. R., & Fisher, R. (2003). The Importance of Normative Beliefs to the Self-Prophecy Effect. *Journal of Applied Psychology*, *88*(3), 423-431.
29. Sprott, D. E., Spangenberg, E. R., & Perkins, A. (1999). Two More Self-Prophecy Experiments. *Advances in consumer research*, *26*(1), 621–626.
30. Thatcher, J. B., Zimmer, J. C., Gundlach, M. J., & McKnight, D. H. (2008). Internal and External Dimensions of Computer Self-Efficacy: An Empirical Examination. *IEEE Transactions on Engineering Management*, *55*(4), 628–644.
31. Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, *46*(2), 186-204.
32. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, *27*(3), 425-478.