CLOUD COMPUTING AT THE UNIVERSITY LEVEL: A STUDY OF STUDENT USE
OF CLOUD COMPUTING APPLICATIONS

A Thesis
by
CHRISTOPHER WARREN TAYLOR

Submitted to the Graduate School
Appalachian State University
in partial fulfillment of the requirements for the degree of
MASTER OF BUSINESS ADMINISTRATION

May 2011
Master's Program in Business Administration
Walker College of Business

CLOUD COMPUTING AT THE UNIVERSITY LEVEL: A STUDY OF STUDENT USE
OF CLOUD COMPUTING APPLICATIONS

A Thesis
by
CHRISTOPHER WARREN TAYLOR
May 2011

APPROVED BY:

_____
Scott Hunsinger
Chairperson, Thesis Committee

_____
Joseph Cazier
Member, Thesis Committee

_____
Dawn Medlin
Member, Thesis Committee

_____
Joseph Cazier
Director, Master of Business Administration program

_____
Edelma D. Huntley
Dean, Research and Graduate Studies

FOREWORD

The research detailed in this thesis will be submitted to *The Journal of Information Technology Management*, which is owned by the Merrick School of Business at the University of Baltimore. This thesis has been prepared according to the journal author submission guidelines.

ABSTRACT

CLOUD COMPUTING AT THE UNIVERSITY LEVEL: A STUDY OF STUDENT USE OF
CLOUD COMPUTING APPLICATIONS

Christopher Warren Taylor, B.S.B.A., Appalachian State University

M.B.A, Appalachian State University

Chairperson: Scott Hunsinger

Cloud computing is a general term for delivering hosted services over the Internet. Google provides a service called Google Docs, a widely used example of cloud computing. Even though many studies have examined the overall concept of cloud computing, no previous research has analyzed students' usage and acceptance of Google Docs in a university setting.

The Theory of Planned Behavior was used to guide my research in examining what factors influence students to use Google Docs. I conducted both interviews (n=15) and surveys (n=316) to gain a better understanding of this phenomenon. By using hierarchical regression analysis and a correlation matrix to analyze the data, it was discovered that all three constructs of the Theory of Planned Behavior (Attitude, Subjective Norm, and Perceived Behavioral Control) are significantly and positively correlated with intention to use Google Docs. It was also found that Affect, which measures a person's emotional responses, is also a significant predictor of Behavioral Intention. My findings can be used by multiple stakeholder groups to better understand the factors influencing the usage of Google Docs.

DEDICATION

This thesis is dedicated to my parents who have supported me all the way since the beginning of my studies. Also, this thesis is dedicated to my wife who has been a great source of motivation and inspiration. Finally, this thesis is dedicated to all those who believe in the richness of learning.

ACKNOWLEDGEMENTS

Journal of Information Technology Management

Cloud Computing at the University Level: A Study of Student Use of Cloud Computing Applications

CHRISTOPHER TAYLOR

APPALACHIAN STATE UNIVERSITY

taylorcw@appstate.edu

ABSTRACT

Cloud computing is a general term for delivering hosted services over the Internet. Google provides a service called Google Docs, a widely used example of cloud computing. Even though many studies have examined the overall concept of cloud computing, no previous research has analyzed students' usage and acceptance of Google Docs in a university setting.

The Theory of Planned Behavior was used to guide my research in examining what factors influence students to use Google Docs. I conducted both interviews (n=15) and surveys (n=316) to gain a better understanding of this phenomenon. By using hierarchical regression analysis and a correlation matrix to analyze the data, it was discovered that all three constructs of the Theory of Planned Behavior (Attitude, Subjective Norm, and Perceived Behavioral Control) are significantly and positively correlated with intention to use Google Docs. It was also found that Affect, which measures a person's emotional responses, is also a significant predictor of Behavioral Intention. My findings can be used by multiple stakeholder groups to better understand the factors influencing the usage of Google Docs.

Keywords: Cloud Computing, Google Docs, Theory of Planned Behavior

INTRODUCTION

The term "cloud computing" is one of the hottest buzzwords in the realm of Information Technology. Although it has been used in many contexts and has been defined in several different ways, cloud computing enables users and developers to utilize services without knowledge of, expertise with, or control over the technology infrastructure that supports them. It is, almost literally, operating the service in a cloud.

Since cloud computing is so loosely defined, many studies have been done to explain conceptually what it is, but few have looked at how it is being used. None to date have looked at its usage and acceptance in a university setting. The purpose of this paper is to examine the factors influencing students in a university setting to adopt Google Docs, an example of cloud computing.

From this point the paper is organized into several sections, starting with the Literature Review, which covers relevant research dealing with cloud computing, including a definition and an overview of Google Docs. This section also includes the theory behind my paper, followed by the hypotheses that extend from the theory. Methodology is the next section, which explains my approach in collecting both qualitative and quantitative data. The Findings section provides the results from the hierarchical regression and correlation analysis. I discuss the implications of these findings in the next to last section, which is followed by the Conclusion section.

LITERATURE REVIEW

Cloud Computing

According to the National Institute of Standards and Technology (NIST), cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction [10]. Availability is promoted in the cloud model. However, it should be noted that cloud computing is still an evolving paradigm. Since the purpose of this paper is to examine what factors significantly influence students' usage of Google Docs, an overview of the characteristics, service models, and deployment models is provided in the following subsection.

Characteristics, Service, and Deployment Models

A characteristic of cloud computing is its ability to be accessed anywhere there is a reliable Internet connection. The ability to promote on-demand self service allows a consumer to have computing capabilities without the need of human interaction with a service's provider. This provides the user the flexibility to access data in real time without having to wait for the service to "boot up" [10]. Another interesting characteristic is the ability to access the data on any network, regardless of the client platform (mobile phone, laptop, etc.) that is used. Having access to the data anywhere means valuable resources are not tied up elsewhere. This leads into the final characteristic of location-independent resource

pooling. By freeing up valuable resources, cloud computing can reassign the unused resources and move them to where consumer demand is at its highest [10].

Cloud computing has been categorized into three unique service models. They are: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). IaaS is the capability provided to the consumer to provision processing, storage, networks, and other fundamental computing resources, which can include operating systems and applications [16]. An example of IaaS is Amazon's Elastic Compute Cloud (EC2). EC2 is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale computing easier for developers [1].

PaaS is the capability provided to the user to deploy consumer-created or acquired applications onto the cloud infrastructure. The consumer does not manage or control the underlying cloud infrastructure, including the network, servers, operating systems, or storage, but has control over the deployed applications and possibly application hosting environment configurations [8]. Google Applications Engine, also known as Google App Engine, is an example of PaaS. Google App Engine enables the user to build and host web apps on the same systems that power Google applications. Basically, Google provides the developer kit that allows the user to create custom apps. The user is not required to have expensive machinery to run it because Google provides the "platform" to run the application.

SaaS is the capability provided to the consumer to use the provider's applications running on a cloud infrastructure. The applications are accessible from various clients such as a web browser (e.g., web-based email) [16]. Google Docs is an example of SaaS. The user only needs to have a web browser like Mozilla Firefox or Internet Explorer to access Google Docs. Google possesses control over the customization with Google Docs. The user is only

allowed to use what is there. To further illustrate, Figure 1 provides a diagram of the three
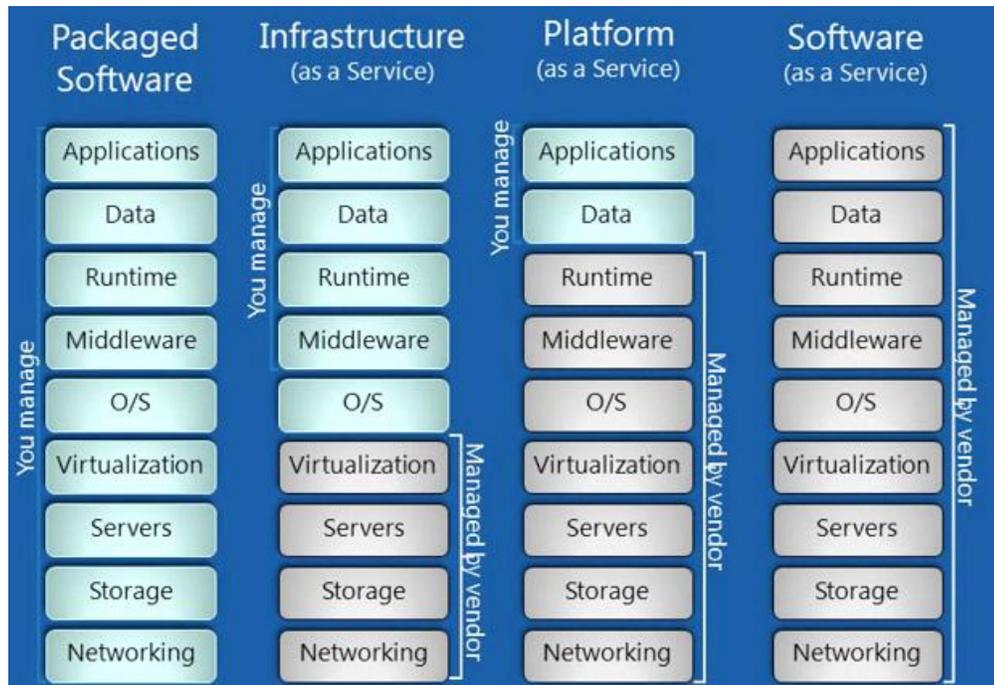
service models.

Figure 1: Service Models of Cloud Computing [5]

Cloud computing utilities are delivered to users in a number of ways. They can be

private, public, community based, or a hybrid of the three. The private cloud remains on the

inside of the organization while the public cloud is made available to the general public [10].

Google Docs

In March 2006, Google acquired the rights to Writely, an online word processing

application. This became a foundation for Google Docs. Meanwhile, Google developed

Google Spreadsheets using the technology it had acquired from 2Web Technologies in 2005

and launched Google Labs Spreadsheets on June 6, 2006 as the first public component of

what would eventually become Google Docs. It was initially made available to only a limited

number of users on a first-come, first-served basis. The limited test was later replaced with a

beta version available to all Google Account holders, around the same time that a press release was issued. In July 2009, Google officially introduced Google Docs, their online office and web storage suite. The Google Docs "office" suite includes applications such as word processing, spreadsheet and a presentation editor. Users have the ability to create new documents and store them securely online, as Google Docs does not need to be installed on a physical device. This is what makes Google Docs an example of SaaS. Google Docs can be accessed from anywhere that has an active Internet connection. This makes it possible to share files around the globe. Google Docs allows for various office file types to be uploaded, which makes this a powerful online collaboration tool. Users can modify documents in real time which makes Google Docs highly desirable when teamwork occurs on the Internet [7].

Current Usage of Cloud Computing

Ambrose and Chiravuri [2] examined the role of three factors in the personal use of Cloud Computing. Using Partial Least Squares analysis, they discovered that two factors (age and experience) have a significant role in a person's intention to use cloud computing.

Community colleges have become early adopters of the cloud computing technology. Researchers used the Technology Acceptance Model to examine whether community college students would adopt cloud computing technology. Observations were done in a small virtual lab in a community college setting. Their research found that students are more likely to adopt cloud computing technology if it is easy to use and requires little training [4].

Institutional Influences on Real World Options

A real option refers to the right but not an obligation to make a managerial decision to take ownership of a real asset or embark on a project at a future point in time [15], [17]. One study examined how institutional influences may affect organizations' perceptions about the

technological characteristics of cloud computing and recognition of real options. Using

Partial Least Squares analysis, Saya et al. [12] found that cloud computing characteristics of

scalability, cost effectiveness, accessibility and lack of security are motivational factors in

growth, abandonment, and deferral.

Theory of Planned Behavior

The Theory of Planned Behavior (TPB) states that the combination of three

constructs: "Attitude toward the Behavior," "Subjective Norm," and "Perceived Behavioral

Control," lead to the formation of a "Behavioral Intention." Attitude is defined as an

individual's positive or negative evaluation of self-performance of the particular behavior.

Subjective Norm is defined as an individual's perception of social normative pressures, or

relevant others' (parents, friends, etc.) beliefs that he or she should or should not perform a

particular behavior. Perceived Behavioral Control refers to an individual's perceived ease or

difficulty of performing a particular behavior [3]. The Theory of Planned Behavior is
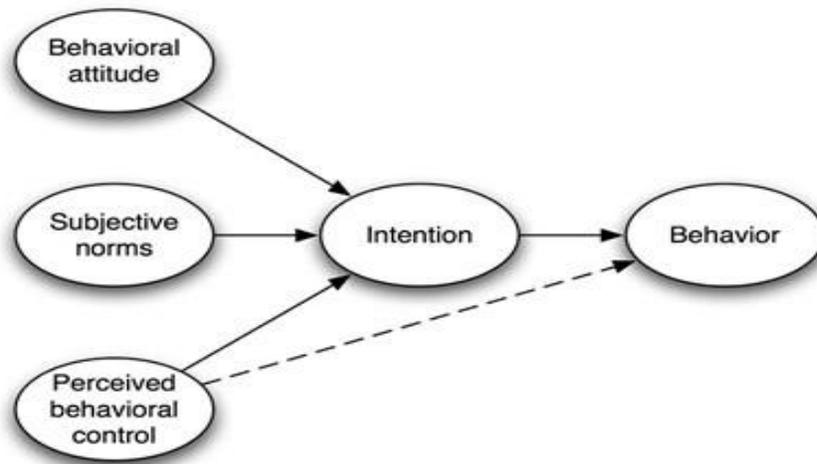
illustrated in Figure 2.

Figure 2: Theory of Planned Behavior Model [3]

Affect

Although each of the constructs in the Theory of Planned Behavior (TPB) is important to consider, some researchers believe there are other factors that should be included to measure the direct linkage between one's intentions and their behavioral outcomes [13]. Even though Attitude is often a significant indicator, it does not measure one's emotional state. TPB gives minimal attention to the role of Affect or emotions in the prediction of intention.

Several researchers have demonstrated that Affect may be an important predictor. Hunsinger and Smith [9] used TPB along with an Affect construct to predict hiring managers' intentions to use IT certifications when hiring new candidates. Another study [6] looked at health related behaviors and how Affect influences decisions when health related issues appear. I included the Affect construct to my hypotheses to examine whether emotions significantly influence usage of Google Docs.

HYPOTHESES

Hypothesis 1: Attitude toward the Behavior is significantly and positively correlated with the intent to use Google Docs.

Hypothesis 2: Subjective Norm is significantly and positively correlated with the intent to use Google Docs.

Hypothesis 3: Perceived Behavioral Control is significantly and positively correlated with the intent to use Google Docs.

Hypothesis 4: Affect is significantly and positively correlated with the intent to use Google Docs.

METHODOLOGY

I used both an interview instrument and a survey to collect data. The interview questions ranged from basic demographics to statements that measured Ajzen's Theory of Planned Behavior. Many previous studies have been done using questionnaires based on the Theory of Planned Behavior, so I felt it would be appropriate to use this as a measuring tool.

First, I randomly selected and interviewed 15 students in the College of Business at my university. I based the interview questions on measures from the Theory of Planned Behavior and the Affect construct. Upon completing interviews with students, I used the results to create a survey hosted through the online site SurveyMonkey. I sent a request to approximately 2,000 students in the College of Business at my university to complete the survey. About 100 of these students are enrolled in a graduate program while the rest are enrolled in an undergraduate curriculum. A total of 343 students started the survey. However, only 316 responses could be used, as 27 of the students did not complete the survey.

Measures

Attitude

A direct measure of Attitude toward using Google Docs was measured with three statements. (ATT1) Using Google Docs is a good idea, (ATT2) Using Google Docs is a positive idea, and (ATT3) Using Google Docs is a helpful idea.

Subjective Norm

To measure the construct of Subjective Norm, I used three unique statements: (SN1) My professors influence me in my decision whether to use Google Docs, (SN2) My friends influence me in my decision whether to use Google Docs, and (SN3) Other people important to me influence me in my decision whether to use Google Docs.

Perceived Behavioral Control

Four statements were used to measure Perceived Behavioral Control: (PBC1) I have the ability to use Google Docs, (PBC2) I possess enough knowledge to use Google Docs, (PBC3) I have the resources to use Google Docs, and (PBC4) I have the time to use Google Docs.

Affect

Affect was measured using four statements that have been validated in previous studies [6], [9]. Participants responded to survey questions using a five-point Likert scale. The four statements used were: (AFF1) I would love/hate to use Google Docs, (AFF2) I would be excited about/be bored using Google Docs, (AFF3) I would be happy/unhappy using Google Docs, and (AFF4) I would be relaxed/stressed using Google Docs.

Behavioral Intention

To measure Behavioral Intention, I used three statements: (BI1) I intend to use Google Docs in the next three months, (BI2) I plan to use Google Docs in the next three months, and (BI3) I anticipate I will use Google Docs in the next three months. Respondents replied using a seven-point bi-polar scale ranging from Strongly Agree to Strongly Disagree.

Listed below in Table 1 are the results for Cronbach Alpha for each construct. Each construct is acceptable as the Cronbach Alpha is greater than .70 for each [11].

Table 1: Computed Cronbach Alpha for Each Construct

Construct	Value
Attitude	.924*
Subjective Norm	.771*
Perceived Behavioral Control	.864*
Affect	.823*
Behavioral Intention	.977*

* acceptable >.70

FINDINGS

Hierarchical regression is used in this study since it allows for specification of the order of entry of the variables based upon theory and previous studies. In addition, hierarchical regression allowed me to observe the change in R^2 as each independent variable is entered into the model. This allowed me to determine whether additional variables are significant when entered into the equation.

The data were entered into an Excel 2010 spreadsheet and then imported into SPSS 17.0 for hierarchical regression analysis and correlation analysis. The results of the correlation analysis and hierarchical regression analysis are shown below in Tables 2 and 3.

Table 2: Correlation Matrix

	Attitude	Subjective Norm	Perceived Behavioral Control	Affect
Behavioral Intention	.640*	.332*	.417*	.589*
Attitude		.237*	.391*	.659*
Subjective Norm			.240*	.196*
Perceived Behavioral Control				.387*

* Correlation is significant at the 0.01 level (2-tailed)

Table 3: Hierarchical Regression Analysis using Attitude, SN, PBC, and AFF

Predictors (Constants)	R	R^2	Sig. F Change	Durbin-Watson
ATT	.639	.408	.000	
ATT, SN	.665	.442	.000	
ATT, SN, PBC	.682	.465	.000	
ATT, SN, PBC, AFF	.706	.498	.000	2.087

(Dependent Variable = Behavioral Intention)

ATT - Attitude; SN - Subjective Norm; PBC - Perceived Behavioral Control; AFF - Affect

The Durbin-Watson statistic is a method for checking serial dependence. Results of the Durbin-Watson test (*d*=2.087) for autocorrelation fall within the appropriate range 1.5 − 2.5 [14].

Hypothesis 1 is supported. The correlation between Attitude and Behavioral Intention is +.640. Attitude was entered first into the hierarchical regression equation and explained 40.8% of the variance in Behavioral Intention. It is therefore concluded that *Attitude is significantly and positively correlated with the intent of students to use Google Docs.*

Hypothesis 2 is supported. The correlation between Subjective Norm and Behavioral Intention = +.332. Subjective Norm was entered second into the hierarchical

regression equation and the total variance in intentions explained increased to 44.2%. Therefore, I conclude that *Subjective Norm is significantly and positively correlated with the intent of students to use Google Docs*.

Hypothesis 3 is supported. The correlation between Perceived Behavioral Control and Behavioral Intention = +.417. Perceived Behavioral Control was entered third into the hierarchical regression equation and the total variance in intentions explained increased to 46.5%. Therefore, I conclude that *Perceived Behavioral Control is significantly and positively correlated with the intent of students to use Google Docs*.

Hypothesis 4 is supported. The correlation between Affect and Behavioral Intention is +.589. Affect was entered in last into the hierarchical regression equation and the total variance in Behavioral Intention explained increased to 49.8%. Therefore, I conclude that *Affect is significantly and positively correlated with the intent of students to use Google Docs.*

DISCUSSION

Through the use of interviews and results gathered from the survey, I have gained a better understanding of what factors influence students to use Google Docs. This is important for a number of reasons. First, this study indicates that Google Docs has a number of benefits for students. One of the interviewees stated, "...it (Google Docs) makes it easier geographically to work on projects." Another stated, "Google Docs is a great tool for collaboration…" and then goes on further to state that it is "…very useful for group(s) working on any data that constantly needs updates."

This research could be extended to include working professionals in a university setting such as college instructors or lecturers. For instance, several respondents implied that

they were required to use Google Docs for several courses. Most of the time, it was the professor of the class who told them to use Google Docs to keep track of their collaborative projects.

Google could eventually look at aiming at other possible target markets. For instance, one question from the interview and the survey asked respondents if they would be willing to pay for a service like Google Docs. This question was then followed up by how much they would be willing to pay for it. During one interview, I found out that "…as a student, I could not afford to pay for Google Docs." Another interview yielded the result of "…if Google Docs had more features, I would consider paying for it." These statements together imply that Google Docs could potentially seek more markets if more features were available from it.

Affect's significant influence on attitude is illustrated by respondents' emotional comments, positive and negative, about the overall use of Google Docs. Several quotes from my interviews and open-ended survey questions are provided on the following page.

- "I like using Google Docs just fine…
- "I like it for group papers…"
- "I like it, it's simple.."

- "Dislike (using Google Docs)"
- "I do not prefer to use it…"
- "I hate using it…"

Figure 3 shows how the Theory of Planned Behavior can be extended to include the construct of Affect.
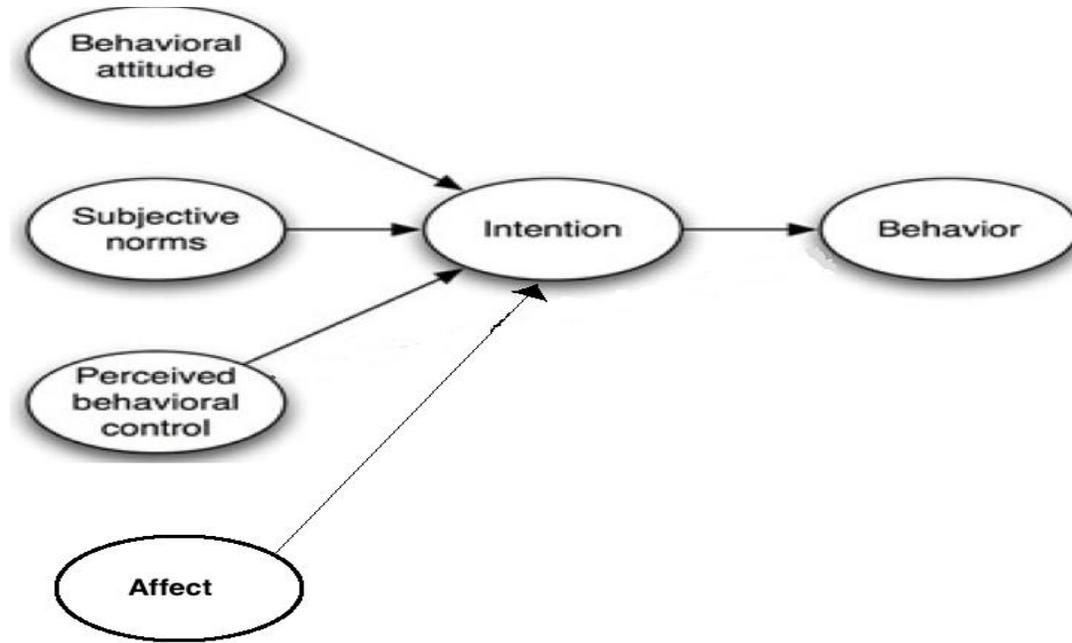
Figure 3: Theory of Planned Behavior with Affect construct

Since both Attitude (which measures what a person believes / thinks) and Affect (which measures how a person feels) were significant in my study, this is something that should be examined further in future research. Future research could integrate other theories such as the Technology Acceptance Model to examine whether perceived usefulness and/or ease of use play a significant role in predicting students' intentions to use Google Docs. Another potential prospect for research could be accomplished by using Structural Equation Modeling (SEM) to analyze the data I collected.

I could also collect data from groups other than university students to see if the significant relationships hold in other domains. With a larger sample size, I could compare findings between graduate students and undergraduate students to see if significant differences occur between the two groups.

CONCLUSION

The results derived from this research show that at the university level, students' intentions to use Google Docs are positively and significantly correlated with the constructs from the Theory of Planned Behavior. All three constructs from the TPB (Attitude, Subjective Norm, Perceived Behavioral Control), as well as Affect, are significant when measuring students' intentions to use Google Docs. Future research using the Theory of Planned Behavior should consider the role of Affect, as it plays a significant role in this study in predicting intentions.

REFERENCES

[1]   Amazon Web Services "Amazon Elastic Compute Cloud",
        http://aws.amazon.com/ec2/, February 2011.

[2]   Ambrose, P. and Chiravuri, A. "An Empirical Investigation of Cloud Computing for
        Personal Use." *MWAIS 2010 Proceedings.* Paper 24.
        http://aisel.aisnet.org/mwais2010/24, May 2010.

[3]   Ajzen, I. "The Theory of Planned Behavior." *Organizational Behavior and Human
        Decision Processes*, Volume 50, 1991, pp.179-211.

[4]   Behrend, T., Wiebe, E., London, J. and Johnson, E. "Cloud Computing Adoption and
        Usage in Community Colleges", *Behaviour & Information Technology*, Volume 30,
        Issue 2, 2011, pp.231-240.

[5]   Czernicki, B. "IaaS, PaaS, and SaaS Terms Clearly Explained and Defined."
        http://www.silverlighthack.com/post/2011/02/27/IaaS-PaaS-and-SaaS-Terms-
        Explained-and-Defined.aspx, February 27, 2011.

[6]   Dutta-Bergman, M. J. "Developing a Profile of Consumer Intention to Seek Out
        Additional Information Beyond a Doctor: The Role of Communicative and
        Motivation Variables." *Health Communication*, Volume 17, 2005, pp.1-16.

[7]   Google "Getting to know Google Docs."
        https://docs.google.com/support/bin/answer.py?hl=en&answer=49008&topic=15152,
        February 2011.

[8]   Gray, M. "Cloud Computing: Demystifying IaaS, PaaS and SaaS.",
        http://www.zdnet.com/news/cloud-computing-demystifying-iaas-paas-and-
        saas/477238, October 2010.

[9]   Hunsinger, D. and Smith M. "Predicting Hiring Managers' Intentions to Use IT
        Certification in the Selection Process." *Journal of Information Technology
        Management*, Volume 16, Issue 4, 2005.

[10]   Mell, P. and Grance, T. "NIST Definition of Cloud Computing V15."
        http://csrc.nist.gov/groups/SNS/cloud-computing/index.html, May 2009.

[11]   Santos, J. R., "Cronbach's Alpha: A Tool for Assessing the Reliability of Scales."
        Journal of Extension, Volume 37, Issue 2, 1999.

[12]   Saya, S., Pee, L. G. and Kankanhalli, A., "The Impact Of Institutional Influences On
        Perceived Technology Characteristics And Real Options In Cloud Computing
        Adoption" *ICIS 2010 Proceedings*. Paper 24.
        http://aisel.aisnet.org/icis2010_submissions/24, August 2010.

[13]   Sniehotta, F. F., "An Experimental Test of the Theory of Planned Behavior." *Applied Psychology: Health and Well-Bein*g, Volume 1, 2009, pp.257-270.

[14]   Tabachnick, B. G. and Fidell, L. S., *Using Multivariate Statistics (4th ed.*)., Allyn and Bacon, Needham Heights, MA, 2000.

[15]   Tallon, P. P., Kauffman, R. J., Lucas, H. C., Whinston, A. B. and Zhu, K. "Using Real Options Analysis for Evaluating Uncertain Investments in Information Technology: Insights from the ICIS   2001 Debate." *Communications of Association for Information Systems* Volume 9, 2002, pp. 136-167.

[16]   Williams, A. "The Feds, not Forrester, Are Developing Better Definitions for Cloud Computing." http://www.readwriteweb.com/enterprise/2009/10/forrrester-says-we-need-better.php, October 2009.

[17]   Wu, Le., Wu, Li. and Wen, Y. "Interdisciplinary Research of Options Theory and Management Information Systems: Review, Research Issues, and Suggestions for Future Research." *Industrial Management & Data Systems, Volume* 110, Issue 3, 2010, pp.433-452.

AUTHOR BIOGRAPHY

Christopher W. Taylor received his Master of Business Administration from Appalachian State University in 2011. His undergraduate studies were in Computer Information Systems. He has competed in a few competitions on the topic of Cloud Computing and placed first in the National Collegiate Conference of the Association of Information Technology Professionals in the student papers competition.

APPENDICES

Appendix A: Interview Instrument

Interview Questions

1) Have you ever heard of Google-Docs?

2) Have you used Google-Docs before?

3) Has anyone close to you (friends, family) ever used Google-Docs?

4) Has a professor or colleague demonstrated the use of Google-Docs?

5) What do you know about Google-Docs?

6) Do you find using Google-Docs to be easier to share information than having to email it between others?

7) How do you feel about using Google-Docs? (Love it, hate it, don't mind using it)

8) Do you trust Google (through the use of Google-Docs) to house your information? (Or how do you feel about entrusting your data with Google?)

9) How do you feel about the company of Google in general?

10) If another type of online web storage were available, would you consider using it instead of Google-Docs?

11) If Google were to start charging a small fee (less than $5 a month) to use their Google-Docs service, would you still consider paying for it?

12) At what price would you be indifferent for purchasing a service like Google-Docs? ($0 to$1, $1 to $2, $2 to $3, $3 to $4, $4 to $5)

13) How did you hear about Google-Docs?

14) What would make you consider changing how you are currently sharing your information? (If they aren't currently using Google-Docs?)

15) What made you decide to start using Google-Docs in the first place?

16) Do you find Google-Docs easy to use/easy to understand?

17) Do you consider Google-Docs to be useful? Explain

Appendix B: Survey Instrument

1. What is your gender?
○ Male
○ Female

2. My current major is _____.
○ Accounting
○ Computer Information Systems
○ Economics
○ Entrepreneurship
○ Finance and Banking
○ Healthcare Management
○ Hospitality & Tourism Management
○ International Business
○ Management
○ Marketing
○ Risk Management and Insurance
○ Master's in Business Administration (MBA)
○ Master's in Accounting
○ Other (please indicate below)
○ Undecided
Other (please
specify)
_____

3. If you are a double-major, please indicate your second major:
○ Not double-majoring
○ Accounting
○ Computer Information Systems
○ Economics
○ Entrepreneurship
○ Finance and Banking
○ Healthcare Management
○ Hospitality & Tourism Management
○ International Business

○ Management

○ Marketing

○ Risk Management and Insurance

○ Master's in Business Administration (MBA)

○ Master's in Accounting

○ Other (please indicate below)

○ Undecided

Other (please
specify)

4. What is your class?

Freshman, Sophomore, Junior, Senior, Graduate Student

5. To be entered into the drawing for 1 of 20 $25 restaurant.com gift certificates, please enter
your email address:
***BE SURE TO ANSWER THE QUESTIONS ON THE NEXT PAGE IN ORDER TO
QUALIFY FOR ONE OF THE PRIZES. INCOMPLETE SURVEYS WILL NOT
QUALIFY YOU FOR THE DRAWING***

6. If a professor told you about the survey in one or more of your classes, please list his/her
name(s) below:

Questions
The following questions refer to using Google-Docs.

7. Before today, I have heard of Google-Docs.
◯ Yes

◯ No

8. Using the application of Google Docs:
◯ Would be worthwhile to me.   ◯ Would make me feel uncomfortable.   ◯ I don't have a preference.

9. _____ influence(s) me in my decision whether to use Google Docs.

	Strongly Agree	Agree	Somewhat Agree	Neutral	Disagree Somewhat	Disagree	Strongly Disagree
My professors	◯	◯	◯	◯	◯	◯	◯
My friends	◯	◯	◯	◯	◯	◯	◯
Other people important to me	◯	◯	◯	◯	◯	◯	◯

10. I _____ to use Google Docs.

	Strongly Agree	Agree	Somewhat Agree	Neutral	Disagree Somewhat	Disagree	Strongly Disagree
Have the ability	◯	◯	◯	◯	◯	◯	◯
Possess enough knowledge	◯	◯	◯	◯	◯	◯	◯
Have the resources	◯	◯	◯	◯	◯	◯	◯
Have the time to learn how	◯	◯	◯	◯	◯	◯	◯

11. Using Google Docs would:

	Extremely likely	Quite likely	Slightly likely	Neutral	Slightly unlikely	Quite unlikely	Extremely unlikely
Enable me to accomplish computer tasks more quickly	◯	◯	◯	◯	◯	◯	◯
Be useful to me	◯	◯	◯	◯	◯	◯	◯
Increase my productivity	◯	◯	◯	◯	◯	◯	◯

12. Learning to operate Google Docs would be easy for me.

◯ Extremely likely   ◯ Quite likely   ◯ Slightly likely   ◯ Neutral   ◯ Slightly unlikely   ◯ Quite unlikely   ◯ Extremely unlikely

13. I would find it easy to get Google Docs to do what I want it to do.

◯ Extremely likely   ◯ Quite likely   ◯ Slightly likely   ◯ Neutral   ◯ Slightly unlikely   ◯ Quite unlikely   ◯ Extremely unlikely

14. My interaction with Google Docs would be clear and understandable.

◯ Extremely likely   ◯ Quite likely   ◯ Slightly likely   ◯ Neutral   ◯ Slightly unlikely   ◯ Quite unlikely   ◯ Extremely unlikely

15. I would find Google Docs easy to use.

◯ Extremely likely   ◯ Quite likely   ◯ Slightly likely   ◯ Neutral   ◯ Slightly unlikely   ◯ Quite unlikely   ◯ Extremely unlikely

16. I would say that Google Docs is useful for my everyday needs.

◯ Strongly Agree   ◯ Somewhat Agree   ◯ Agree   ◯ Neutral   ◯ Disagree   ◯ Somewhat Disagree   ◯ Strongly Disagree

17. Google Docs seems easier to use than traditional email for sharing information.

◯ Strongly Agree   ◯ Somewhat Agree   ◯ Agree   ◯ Neutral   ◯ Disagree   ◯ Somewhat Disagree   ◯ Strongly Disagree

18. _____ use Google Docs in the next three months.

	Strongly Agree	Agree	Somewhat Agree	Neutral	Disagree Somewhat	Disagree	Strongly Disagree
I intend to	○	○	○	○	○	○	○
I will	○	○	○	○	○	○	○
I plan to	○	○	○	○	○	○	○

19. Generally speaking, I do what _____ think(s) I should do.

	Strongly Agree	Agree	Somewhat Agree	Neutral	Disagree Somewhat	Disagree	Strongly Disagree
My professors	○	○	○	○	○	○	○
My friends	○	○	○	○	○	○	○
Other people important to me	○	○	○	○	○	○	○

20. Using Google Docs is a _____ idea.

○ Very Good   ○ Good   ○ Somewhat Good   ○ Neutral   ○ Somewhat Bad   ○ Bad   ○ Very Bad

21. Using Google Docs is a _____ idea.

○ Very Positive   ○ Positive   ○ Somewhat Positive   ○ Neutral   ○ Somewhat Negative   ○ Negative   ○ Very Negative

22. Using Google Docs is a _____ idea.

○ Very Helpful   ○ Helpful   ○ Somewhat Helpful   ○ Neutral   ○ Somewhat Unhelpful   ○ Unhelpful   ○ Very Unhelpful

23. I would _____ to use Google Docs.

○ Love   ○ Somewhat Love   ○ Neither Love nor Hate   ○ Somewhat Hate   ○ Hate

24. I would _____ using Google Docs.

○ Be Excited About   ○ Be Somewhat Excited About   ○ Be Neutral About   ○ Be Somewhat Bored About   ○ Be Bored About

25. I would _____ using Google Docs.

○ Be Happy   ○ Be Somewhat Happy   ○ Be Neutral About   ○ Be Somewhat Unhappy   ○ Be Unhappy

26. I would _____ using Google Docs.

○ Be Stressed   ○ Be Somewhat Stressed   ○ Be Neither Stressed nor Relaxed   ○ Be Somewhat Relaxed   ○ Be Relaxed

27. I trust Google Docs with the privacy of my information.

○ Strongly Agree   ○ Somewhat Agree   ○ Agree   ○ Neutral   ○ Disagree   ○ Somewhat Disagree   ○ Strongly Disagree

28. I trust the company of Google.

○ Strongly Agree   ○ Somewhat Agree   ○ Agree   ○ Neutral   ○ Disagree   ○ Somewhat Disagree   ○ Strongly Disagree

29. Google seems like a trustworthy company in general.

○ Strongly Agree   ○ Somewhat Agree   ○ Agree   ○ Neutral   ○ Disagree   ○ Somewhat Disagree   ○ Strongly Disagree

30. I trust Google Docs more than I trust traditional email when collaborating with others.

○ Strongly Agree   ○ Somewhat Agree   ○ Agree   ○ Neutral   ○ Disagree   ○ Somewhat Disagree   ○ Strongly Disagree

31. I would pay a small fee (less than $5 a month) to use a service similar to Google Docs.

◯ Strongly Agree   ◯ Somewhat Agree   ◯ Agree   ◯ Neutral   ◯ Disagree   ◯ Somewhat Disagree   ◯ Strongly Disagree

32. I would be okay with purchasing a service similar to Google Docs at the HIGHEST price of:

◯ $0.00   ◯ $0.00 to 0.99   ◯ $1.00 to 1.99   ◯ $2.00 to 2.99   ◯ $3.00 to 3.99   ◯ $4.00 to 4.99   ◯ $5.00 or more

33. I would pay for another service provider similar to Google Docs.

◯ Strongly Agree   ◯ Somewhat Agree   ◯ Agree   ◯ Neutral   ◯ Disagree   ◯ Somewhat Disagree   ◯ Strongly Disagree

34. Having the _____ to decide whether to use Google Docs would make it [much easier----much harder] for me:

	Much easier	Easier	Somewhat easier	Neutral	Somewhat more difficult	Much difficult	Much more difficult
Ability	◯	◯	◯	◯	◯	◯	◯
Background Knowledge	◯	◯	◯	◯	◯	◯	◯
Time to Learn How	◯	◯	◯	◯	◯	◯	◯
Resources	◯	◯	◯	◯	◯	◯	◯

35. Are there any other factors or reasons that influence you whether to use Google Docs?

_____

(Text box for answer input)

4. Thank You!

Thank you very much for your participation in this study!

Appendix C

Consent Form For Interview

This questionnaire in the form of an interview is open to students taking classes in the College of Business at Appalachian State University. It is research that I (Christopher Taylor) am conducting for an independent study. This interview will ask questions about whether you have considered using or know information about the application of Google-Docs.

The interview should take about 15 to 20 minutes to complete. There are 17 questions in the interview. You will be asked a series of questions in which you will answer the questions accordingly. This interview will not be recorded.

You are a volunteer. Your decision to participate in this research is completely voluntary. You may quit the interview anytime you wish. Any information about your participation, including your identity, will be kept confidential.

If you have questions about the study, please contact Dr. Scott Hunsinger the faculty advisor, phone: (828) 262-2044, email: hunsingerds@appstate.edu or Christopher Taylor, phone (336) 469-6953, email: taylorcw@appstate.edu.

By conducting this interview with me (Christopher Taylor), you are indicating that you are at least 18 years of age and consent to participate in this study.

Please listen to the instructions for each group of questions carefully. It is important that you answer all the questions honestly and to the best of your ability.

Appendix D

Consent Form for Survey

This questionnaire is open to students taking classes in the College of Business at Appalachian State University. It is research that I (Christopher Taylor) am conducting for an independent study. The survey asks questions about whether you have considered using or know information about the application of Google-Docs.

The survey should take about 15 to 20 minutes to complete. There are 35 questions in the survey.

You are a volunteer. Your decision to participate in this research is completely voluntary. Any information about your participation, including your identity, will be kept confidential.

If you have questions about the study, please contact Dr. Scott Hunsinger, phone: (828) 262-2044, email: hunsingerds@appstate.edu.

By completing and submitting this survey, you are indicating that you are at least 18 years of age and consent to participate in this study.

Please read the instructions for each group of questions carefully. It is important that you answer all the questions honestly and to the best of your ability.

All students who complete the survey will be entered into a drawing to win 1 of 20 $25 restaurant.com gift certificates. Participants may discontinue survey at any time, but only completed surveys are eligible for the drawing.

VITA

Christopher Warren Taylor was born in Elizabeth City, NC on April 17, 1985. He graduated from Northeastern High School in June 2003. Christopher married the love of his life, Kimberly Nicole Taylor, on August 5, 2009. In December of that same year, he received his Bachelor's degree in Computer Information Systems from Appalachian State University. Not quite done with his education, Christopher went on to pursue his Master's degree in Business Administration in which he received May 2011 again from Appalachian State University.