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THE USE OF STANDARDIZED ACCOUNTING PACKAGES IN ASSESSING CREDIT RISK: THE CASE OF CASH

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ABSTRACT

Credit analysis is a key component of modern finance. It is used in both the capital markets, evaluating bond investments, and the banking markets, evaluating credit applications.

Throughout the years many techniques have been developed to assess credit risks. These include credit scoring models often built around the 5Cs of credit (character, capacity, collateral, conditions, and capital) and quantitative models pioneered by Beaver and Altman that focus on a borrower's probability of default (or inability to meet credit obligations).

Credit assessment also has its place in the classroom. Finance, accounting, and banking programs across the globe typically include a significant amount of credit risk assessment, usually in conjunction with the evaluation of financial statements. Often these programs focus on the use of one or more financial databases such as Compustat and/or RMA Annual Statement Studies. Such programs typically include a great deal of coverage on the calculation and interpretation of key metrics (financial ratios) used in evaluating financial statements.

This paper examines an alternative approach to teaching credit analysis, namely the use of CASH. CASH is one of several professional-grade programs that address much of the drudgery associated with the "number-crunching" exercises that are a common element of traditional financial statement analysis. The paper reviews the use of CASH as a tool to develop a better understanding of credit analysis among students and to better prepare them for productive careers in finance and accounting. The paper also documents the benefits gained by the students being exposed to a "professional" or "real-world" program such as CASH.

INTRODUCTION

Credit analysis is a key component of modern finance. It is used in both the capital markets, evaluating bond investments, and the banking markets, evaluating credit applications.

Throughout the years many techniques have been developed to assess credit risks. These include various credit scoring models, many of which are built around applications of the 5Cs of credit (character, capacity, collateral, conditions, and capital). In addition, there are quantitative models pioneered by Beaver and Altman (Beaver, 1966; Altman, 1968) that focus more specifically on a borrower's probability of default (or inability to meet their credit obligations). Likewise, there has been a continual development and refinement of credit and default assessment models in both the academic and practitioner worlds.

This paper examines an alternative approach to teaching credit analysis, namely the use of a professional-grade program that handles much of the drudgery associated with the "number-crunching" exercises that are common in financial statement analysis. The benefits of using such a program are highlighted.

BACKGROUND

The ability to assess credit is an issue in which great importance has been placed in the classroom. Many finance, accounting, and banking programs across the country and the world offer courses in which various techniques for assessing or evaluating (and ultimately managing) credit and other financial risks are presented.

One of several databases is typically used to facilitate these types of endeavors. Depending on availability, Value Line, Mergent (MergentOnline), Thomson Financial's Worldscope, and probably most noteworthy, Standard & Poor's Compustat (Research Insight) and the RMA (Risk Management Association) Annual Statement Studies all offer valuable data used in the analysis of financial statements. Compustat (Research Insight) provides a wide array of financial information as well as various analytical tools used to analyze financial statements, much of it related to its own position in providing credit and other types of financial information to the capital markets. The RMA Annual Statement Studies is a collection of data extensively used in the banking industry in assessing the financial standing of credit applicants.

In regards to the RMA information, one potentially valuable tool for exposing students to the rigors of financial statement analysis is the CASH-SUITE set of products, developed and marketed by Financial Tools, Inc. (www.financialtools.com).This program is extensively marketed to commercial lending institutions, but has not been widely available in academia. Among its many features, the program automates much of the number-crunching exercises used in the evaluation of financial statements. It automatically generates many of the standard comparisons used in credit analysis such as common-sized financial statements, cash flow analysis, and comparisons to industry-level data (i.e., the RMA database).

TRADITIONAL FINANCIAL STATEMENT ANALYSIS VERSUS CASH

Financial ratio analysis is one of the more important tools available for analyzing financial statements (Barnes, 1987). The instruction in "traditional" financial statement analysis tends to devote a significant amount of time and effort to the definition, calculation, and interpretation of various financial ratios. A quick review of any standard textbook in the field (Fridson & Alvarez, 2002; Gibson, 2007; Penman, 2007; Peterson & Fabozzi, 2006; Stickney, Brown, & Wahlen, 2007; Wild, Subramanyam, & Halsey, 2007) will document this.

Similarly, the teaching of such courses often includes assigned projects that require students to analyze company financial statements using those ratios, along with other tools of financial statement analysis. A variety of approaches differing in purpose, scale and scope have been evaluated in the past (Kern, 2000; Koehn & Hallam, 1999; Sullivan, 1996).

Nonetheless, there may be another option. There are many professional software programs used in practice that help standardize the analysis of financial statements for a variety of uses (e.g.,

credit or investment analysis). One such program or set of programs is CASH-SUITE. This program is one of the industry leaders, and is extensively marketed to commercial lending institutions, from small community banks to large multinationals.

Although very costly as a stand-alone, proprietary program, the CASH program has been recently made available to use as a teaching tool at a medium-sized, regional university in the South. It is currently being used in the university's graduate and undergraduate financial statement analysis courses as a supplement to other, more traditional approaches.

As stated above, CASH actually represents a suite of programs. In its most recent update, Financial Tools repackaged several of its key products into a more integrated product offering. The suite has four components. The first, and likely the most relevant to a university setting, is CASH-Insight. This program focuses on the role of a credit or financial analyst looking to extract meaning from a set of financial statements (and/or tax returns). It is based on and actually sits upon a copy of Microsoft Excel, taking advantage of the industry-standard spreadsheet program with its high level of familiarity and powerful set of tools. Financial statement data is entered onto a template which serves as the launching pad for a variety of different types of analysis.

For example, the program can produce a wide variety of financial analyses, from common sized financial statements and financial ratio analysis to very sophisticated cash flow and pro forma analyses and projections. Just as important, and perhaps more so, the analysis can be output in a variety of forms (Microsoft Excel spreadsheet, Microsoft Word, Adobe Acrobat, etc.). Not only is the mundane side of spreading and analyzing financial statements taken care of but so too is the analysis! With its complex programming foundation, CASH is designed to actually produce standard credit memos, credit analyses, and other types of custom analysis that is crucial to those working in the credit field. It actually has the ability to independently assess the financial data as it conducts its own analysis of trends found in the data and any significant relationships with industry (peer) averages.

The Cash-Insight data also becomes available to the other CASH Suite programs. Although unlikely to be used in an introductory course in financial statement analysis, these advanced modules could be used in advanced courses focusing on more complex (real-world) issues. For example, the CASH-Reward program standardizes risk assessments and credit grading, giving insights into the process of how institutions formalize underwriting and risk management policies. Allowing the user to set various risk parameters, both quantitative and qualitative, both firm-specific and economy-wide, and to see the implication of changes in any of those parameters would likely be quite valuable to anyone looking to make a significant career in lending or investing.

Likewise, the risk ratings and loan grades from the CASH-Reward program drive the risk-based loan pricing module that is the hallmark of the CASH-Profit program. This program can be used to examine how various risk elements impact the pricing side of a loan. One has the ability to see how adjustments to unique situations, to different types of transactions, and to various relationship factors, can affect the returns demanded from granting a specific credit. Likewise, the ability to manage the risk-reward structure at the portfolio level can be investigated using the CASH-GlobalView program. These multifaceted features provide unique views of many of the complexities associated with the credit-granting function. As such, they may prove to be extremely useful hands-on tools in more advanced courses in financial risk management or in specialized

commercial lending courses. However, since further discussion is not necessarily germane to our main thesis, these advanced topics are not examined further.

STUDENT REACTIONS TO CASH

Although no formal tests have been conducted on the effectiveness of using CASH vis-à-vis more traditional approaches to financial statement analysis, ad-hoc evidence gathered from student surveys of their experiences offers insights into the value of the program as perceived by those students. To put their comments in perspective, the CASH program was used only after the students had worked together to conduct a traditional analysis of a company's financial statements. And this analysis was carried out only after extensive classroom work on reviewing relevant accounting procedures, as well as discussions on the interpretation of the ratio results.

Remarkably, student reactions to using CASH have been consistently positive. Although many resented having to do additional work (despite its prowess in conducting financial analysis, because of the extensive data-entry requirements, CASH is a labor-intensive process), the majority were strongly in favor of having even more exposure to tools such as CASH. They felt that such exposure would be valuable to them, both in terms of fostering a better understanding of the process of financial statement analysis, but more so as a tool for gaining a competitive advantage in the workplace.

They were also quite insightful in understanding that programs such as CASH would never fully replace many of the standard approaches for learning about analyzing financial statements. They realized that without a prior knowledge of how specific ratios were defined and the accounting issues that might cloud one's judgment when interpreting the significance of those ratios they would not fully understand what CASH was reporting in its analysis.

Overall, they expressed very positive attitudes about their experience with CASH. Although there were several technical issues that resulted in unrequested negative consequences (most of these were related to computer network issues, although some were a reflection of the poor prior accounting and computer skills of some of the students), most expressed an interest in having had more time to explore the program. Having the ability to go back in time, many stated they would have been more industrious in their approach to the exercise. All in all, it appears to have been a very productive enhancement to the course.

SUMMARY AND CONCLUSIONS

In today's competitive environment, colleges and universities are continually looking to provide their students with the tools necessary to compete. The ability to evaluate financial statements is one skill valued in the workplace. Another is the ability to effectively work in a team environment. So too is the ability to use the "tools of the trade." The CASH program appears to offer students the opportunity to excel in each of these areas.

Although it has not been specifically proven, it is believed that a professional program such as CASH has improved the ability of students to make better assessments of financial statements, thus making them more valuable to prospective employers. Because it requires them to be more proactive in the process, the old adage about learning more by doing would seem appropriate.

And finally, as the financial marketplace begins to better appreciate the important role colleges and universities have in developing valuable professional skills such as financial statements and credit analysis, financial institutions may be more encouraged to work with their local educational institutions to help them acquire professional programs such as CASH for use in their local communities. It would appear to be a win-win situation for all.

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AN EXPLORATORY STUDY OF APPLYING UBIQUITOUS TECHNOLOGY TO RETAIL BANKING

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INTRODUCTION

Like many service industry sectors where information is at premium, today's profit-oriented financial institutions are experiencing a revolutionary change of information technology. Confronted by rising operating cost, demanding customers, and growing internal competition, firms are forced to develop new and better customer centered services and distribution channels hinging on effective IT strategy (Soteriou and Zenios, 1999; Hernandez and Mazzon, 2007). Quickly converting IT investment to realistic business advantages leads to new customer acquisition and increases product's switching cost (Guerrero, Egea, and Gonzalez, 2006; Soteriou and Zenios, 1999). The Internet, for instance, presents an opportunity of providing more economic substitute for brick-and-mortar branches (Kassim and Abdulla, 2006). Over the last decade, the remarkable development of information and communication technologies has rebuilt the way that banks conduct their business and created new customer services channels (Sayar and Wolfe, 2007). One example would be that the Internet allows people to trade stocks despite of geographic constraint (Afuah and Tucci, 2001).

The advent of wireless telecommunication has generated another significant wave of change in our society. Decouple from wired computers, we are switching to a communication pattern that has never been seen before. This new pattern allows us to perform tasks on the run and at any time, thus blurring the boundaries between personal and business dimensions. Today, scholars and practitioners in IT are foretelling the world that provides the ultimate form of ubiquitous networks and universal devices (Miller, 2002). The core constituent of this prognostication is referred to as the "U-commerce" where U stands for "ultimate" or "ubiquitous". U-commerce is defined as "the use of ubiquitous networks to support personalized and uninterrupted communications and transactions between a firm and its various stakeholders to provide a level of value over, above, and beyond traditional commerce" (Watson, et al., 2002). Figure1 delineates the development of commerce platform in history and future. Although it is argued that several inner constructs exist within the U-commerce, in this context of study, the discourse has its focal point on ubiquity that allows users to access networks from anywhere at any time, and in turn, to be reachable at any place and any time.

Source: Myers, 2003
Figure 1. The Trace of Commerce Platform Transformation

Firms in finance industry have been at the forefront of innovation and new technology adoption. They struggled to maintain their leading positions in such highly competitive industry for many years (Dewan and Seidman, 2000). In the 1960s, banks and insurance companies were explorers in adopting cutting edge information technologies such as mainframe computers and large data storage machines (Gopalakrishnan, Wischnevsky, and Damanpour, 2003). In the age of Internet, they introduced customer banking services on the new communication platform that can be accessed through a desktop computer or a handheld mobile device. Today, ubiquitous computing is being pulled out of shade and crafted to be use with comfort of ease (Yoon and Kim, 2007). Similar to the Internet and mobile technology, the ubiquitous computing is expected to provide financial companies with a new way to improve customer service and diversify financial products.

The discussion of ubiquitous technology for banking service has increasingly made appearances in IT and finance professional publications. However, these discussions have largely focused on technical details specifications, overview of the technology, and individual company oriented feasibility report, whereas few works have utilized rigorous academic methodology to yield reliable findings and to answer essential research questions (e.g. what are the respective effects of u-banking acceptance antecedents?). Another challenge (or cause of such challenge) for u-banking research lies in the lack of consensus in terms of concept, identity (when compared with Internet banking and mobile banking), service types, and business model construction. Hence, the purpose of this study is multi-folds. First, we attempt to coin the concept and characteristics of u-banking phenomenon based on a wide literature review and solid industrial practices. Second, we plan to present a taxonomy in which the characteristics of Internet banking, mobile banking and u-banking can be illustrated and compared. In this way, a better understanding can be presented to distinguish the unique attributes of each service category. Third, by drawing upon legacy IS theories in technology diffusion, we investigate the u-banking adoption issue and provide in-depth analysis on customer's psychological activities related to new service usage. A quantitative method is used based on the data collected from a real world case study. Doing so allows us to reach reasonable level of generalizability so that the research finding is not stand alone in nature.

ELECTRONIC BANKING SERVICES

Internet Banking

Simply put, Internet banking enables customers to conduct banking transaction on the Internet, which is technically available at anytime. Sayar and Wolfe (2007) argued that Internet banking should not only provide services and products information or an information inquiry service (e.g., checking an account balance), but also allow monetary transactions. Although factors such as government support, competition, education, and income are referred to as driving forces, the main fuel of Internet banking is the diffusion of public network and personal computer (Awarmleh, R., C. Fernandes, and A. Raed, 2006; Littler and Melanthiou, 2006; Hernandez and Mazzon, 2007). The penetration of Internet has boosted the interest in Internet banking as new service and the deregulation of financial service industry provide new entrants with an opportunity to compete with incumbents (Littler and Melanthiou, 2006). However, customers' acceptance of the technology is presented as the great influence on the continuous success of Internet banking (Mols, 2000;

Pikkarainen et al, 2004; Jaruwachirathanakul and Fink, 2005). Although Internet capable handheld devices such as mobile phones can also be the platform for virtual banking, currently the majority of online financial transactions are performed on personal computers. Our study indicates that the most commonly used Internet banking services encompass information inquiry, inter-account transfer, bill payment, financial products search, stock transaction, insurance subscription, and financial portal services.

Financial institutions expect Internet banking to introduce competitive advantages such as decreased task processing time, paperless office automation, effective customer service, operating costs reduction. On the other hand, customers are attracted to banking services that are not only accessible regardless of time and location constraints but also better business terms including lower commissions rate, reliable service quality, and time saving (Guerrero et al, 2007). Indeed, Internet banking provides banks with significant rooms of mitigating transactional costs that remain unchangeable in traditional banking service (Mintel, 2001). Many financial institutions succeed in market expansion and manage to facilitate cross-selling of other financial products (Littler and Melanthiou, 2006). For consumers, Internet banking provides time and place convenience as well as lower transaction fee and more attractive interest rate on positive balance (Littler and Melanthiou, 2006).

Mobile Banking

Mobile banking refers to a behavior in which customers conduct banking transactions using mobile devices such as cell phone, PDA, or smart phone that utilize a combination of wireless protocols (e.g. TCP/IP, GSM, CDMA) and network applications (e.g. XML). The integration of wireless telecommunication and web technology is considered as a key functionality that separates voice-graded service and data-grade service (Constantiou, et al., 2007). Further, researchers argue that the proliferation of mobile banking service has its root in the huge number of existing mobile device users, the rapidly developing hardware design, and the promising features of mobile banking services. It is also speculated that the penetration of mobile banking will be more influential than that of Internet banking simply because there are three times as many mobile phone users as those who use PC (Riivari, 2005). In 2005, it is estimated that nearly 75% of European consumers subscribe at least one mobile phone, whereas the ratio of PC Internet users has not passed 60%. Table 1 provides a comparative view to illustrate the situation.

Another driving factor of mobile banking is the technical advancement of mobile device. As mobile phones can offer the speedy GPRS, EDGE, or 3G data transmission and large, high-defined color displays, they are becoming powerful tools which enable them to access information and a variety of services with less time and effort. Although Moore law applies differently in mobile telecommunication industry, such evolution allows users to handle services and features more easily (Riivari, 2005). The value of mobile banking lies in the convenient accessibility of service, the overall effort-saving qualities, and handy and effective security procedure (Mallat et al, 2004). Therefore, mobility is the most distinct advantage of mobile banking over the Internet banking. Since most e-banking transactions are conducted through online PCs, customers need to stick to point place to access online connected computer. However, users can access bank systems outside of home or office at any time with their mobile devices. Mobility also increases the synchronization

of communication and enhances the accuracy of transaction (Chinowsky and Rojas, 2003). Further, compared to Internet banking, mobile banking is efficient in identifying user and confirming rightful transaction. Since a mobile device is normally used by owner only, user has relatively less concerns of hacking or privacy problem than the Internet banking, which might have multiple users (Mallat et al, 2004). Mobile technology enables banks to realize instant and reciprocal customer communication using applications installed in mobile devices. In addition to its unique benefits, mobile banking also presents the same advantages as Internet banking does to service providers, according to the research of Meridea (2005).

Mobile solution is applicable for multiple financial services. For instance, it provides visual counseling based on 3G telecommunication, enables new payment solution based on Radio Frequency Identification (RFID), conducts e-marketing using MMS services, and so on. Among these new functionalities, mobile payment is considered one of the most important applications that mobile banking provides (Mallat et al., 2004). There are basically two categories of mobile payment: micro-payments and macro-payments, as shown in Table 2.

RESEARCH MODEL

The UTAUT was chosen as the basic model for this research because it receives extensive statistical support and presents a comprehensive yet parsimonious model. As discussed earlier, it is desirable to customize the framework to adjust the unique features of this specific research context. Therefore, the authors propose the following research model for U-banking adoption, as shown in figure 6.
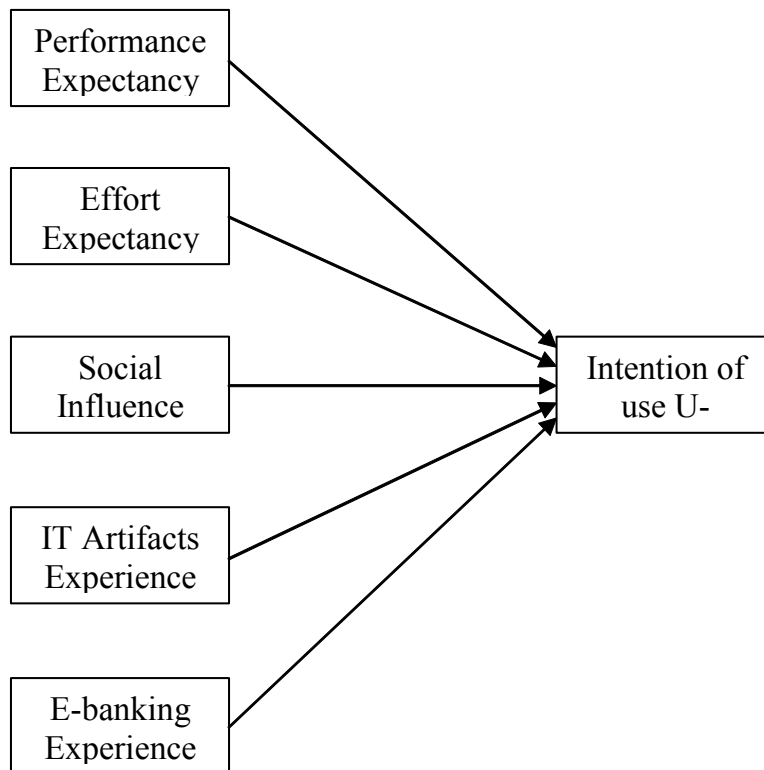
Figure 6. The U-banking Adoption Model

The authors has collected perception data from individuals in South Korea, which is a country that has a high penetration rate of mobile technology. Value added services are widely provided and the number of subscribers account for over half of the entire population. The instrument is designed to elicit respondents' subjective perception about each constructs' impact to the dependent variable. For instance, several items were included in the survey asking people how strongly they believe the ease of use would affect their behavioral intention of use. The statistical findings generated have indicated that significant relationships do exist among the constructs and most of these findings are congruent with the hypothesis developed from our research model. Table 5 shows the findings for each formative construct. All latent variables demonstrate a high level of significance (below 5% level of significance) except for E-banking experience.

Dependent Variable: Intention

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.	R2
	B	Std. Error	Beta			
Performance Expectancy	0.208	0.06	0.195	3.44	0.001	0.038
Effort Expectancy	0.242	0.061	0.223	3.955	0	0.05
Social Influence	0.183	0.064	0.163	2.86	0.005	0.027
IT Experience	0.164	0.053	0.176	3.092	0.002	0.031
E-banking Experience	0.07	0.049	0.083	1.434	0.153	0.007

Table 5. Statistical Evidence for Research Hypothesis

DISCUSSION AND CONCLUSION

The author argues that consumers' intention of subscribing u-banking concept can be better understood if it is viewed through a customized model based on previously established conceptual developments. The paper's basic premise is that constructs such as perceived performance expectancy, effort expectancy, and user's pertinent experience establish formative influence to consumer's behavioral intention, especially for high involvement products such as banking systems. Drawing upon and adapting the legacy theoretical achievements, it proposes several sources of the constructs. This paper then proposes a set of hypotheses extending the discussion to a further detailed level. In doing so, more insights can obtained in terms of how key factors interact with each other. On the other hand, major limitations lie in the measurements development, which hinder us from better validating our proposal. Future efforts are demanded to shed light on designing measures that can be validated rigorously so as to improve this study by addressing aforementioned limitations.