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Self-Service Technology in a Library System: An Examination of Potential Library Member Adoption of Self-Service Checkout at a Southeastern County Library System

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Self-Service Technology in a Library System: An Examination of Potential Library
Member Adoption of Self-Service Checkout at a Southeastern County Library System

by
Keisha G. Phillips-Daley

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Approval Page

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Abstract

Self-Service Technology in a Library System: An Examination of Potential Library Member Adoption of Self-Service Checkout at a Southeastern County Library System. Keisha G. Phillips-Daley, 2020: Applied Dissertation, Nova Southeastern University, Abraham S. Fischler College of Education and School of Criminal Justice. Keywords: library services, technology, self-service, intrinsic motivation, extrinsic motivation

This applied dissertation examined potential library member adoption of self-service technology (SST) in a southeastern county library system. The research framework of this study was based on the Technology Acceptance Model (TAM). More distinctively, this study explored the significance of motivation factors, to include both intrinsic and extrinsic factors, for choosing to use SST in a library environment as the reasonable effect of familiarity in influencing the possibility of its adoption.

The researcher used a non-probability sampling method to identify participants for the study. Edmonds and Kennedy (2013) suggested that surveys were primarily utilized to observe trends, personal attitudes, or interpretations on matters of widespread interest. Two types of self-administered questionnaires were used for this study—paper-based and email-based surveys. The prepared questionnaire was formulated on the evaluation of existing literature. The written work was adopted as a support to gain intangible and capacity information connected to the evaluated variables. The questionnaire comprised two operating variables. These variables included motivation factors of both intrinsic and extrinsic behaviors. In addition to the motivation factors, library members' views regarding SST in library surroundings, library members' purposefulness in using SSTs for borrowing library material, general questions, and statements evaluating self-checkout involvements using SSTs were included in the questionnaire. Demographic information was included in the questionnaire for research purposes. The instrument was comprised of 40 items. Using a quantitative approach, the researcher followed Creswell's (2012) five-step process for the collection of data. The information gathered was evaluated using the Statistical Package for the Social Sciences (SPSS) computer software program.

Table of Contents

Tables

Chapter 1: Introduction

Libraries actively strived to increase their productivity while improving their labor saving strategies and technologies. Libraries were included among different public service surroundings and corporations such as airlines, the banking industry, travel, and consumer sales whose primary focus was customer satisfaction. In fact, they were the forerunners that assisted consumers in becoming self-sufficient. Self-service was, therefore, the primary focus of most libraries today. Library members were currently able to manage most of their library experience. The operation of libraries had been transformed with the introduction of automated material handling (AMH), self-service circulation of library materials, self-service stations for the processing of library materials, and mobile staff service desks.

Background and Justification

Traditional books seem passé; however, there would always be an increased quest for knowledge. Libraries would be needed more than ever in today's increasingly competitive global economy. This study focused on a southeastern county library system that served library members through 17 library branches, a bookmobile, and an annex. According to the budget allocated for fiscal year 2015, "From fiscal year 2007 to fiscal year 2014, ad valorem revenue has decreased by $11.37 million or 22.7%" (Palm Beach County [PBC], 2015, p. 145). This decline was attributed to an increase in operational expenses that resulted from the expansion of library facilities and amplified contract costs. Increases in personnel costs needed to fully fund all positions, along with increases in retirement liabilities, and the cost of health insurance were also significant factors for fiscal year 2015 (PBC, 2015). Impacted by emerging issues for fiscal year 2015, tax

revenues for operating expenses showed a steady increase. As a result, the library continued to complete all Library Expansion Program II (LEP II) capital projects to expand square footage and comply with comprehensive plan goals. During this time, the library continued to focus on maintaining consistency in the service levels of all their programs.

The new and renovated library branches experienced an increase in public demand because of the economic downturn as well as the convenient, attractive new and renovated library branches. In addition, the main city of the southeastern county library system "experienced an increase in population growth, and remains the largest city both in size and population with approximately 103,760 residents within 55.48 square miles" (PBC, 2014, p. 12). According to the budget for fiscal year 2007, "Library District (LD) population grew by 98,439 or 13% between 2000 and 2005" and was, "expected to grow another 97,035 or 12% between 2005 and 2010" (PBC, 2006, p. C-44). By the end of fiscal year 2015, "all eighteen projects included in the LEP II will finish, adding 182,768 square feet or 76% more space to the library system" (PBC, 2015, p. 145). The library successfully maintained full-time equivalent employees (FTE) at 420, but planned to increase FTE positions to 422, which was comparable to fiscal year 2007. It was, therefore, necessary to adapt self-service technology (SST) to their procedures to allow them to continue to provide the services they currently offered, address the increased use of services, and meet the challenges of the future.

Meuter, Ostrom, Roundtree, and Bitner (2000) had declared SST generally as "technology interfaces that enable consumers to produce a service independent of direct service employee involvement" (p. 50). The adoption of SST similarly influenced the

significance of service, as it now affected the behavior of consumers in order for them to be willing to use an SST. Some consumers might possibly not regard SST in areas such as AMH self-service checkout, as an offered service, but instead regard this as being inadequate in providing equal or same service levels as the one received through interaction with a library associate (Dean, 2008). Traditionally, library associates on behalf of the library members provided service. However, technology has drastically changed the meaning of service, primarily with the manner in which service was understood and advanced. Diverse types of service delivery had been offered in several industries and similar environments, apart from service organizations like libraries; such as banking institutions, airline carriers, hotel chains, and retail industries (Meuter et al., 2000).

Self-services that were available to library members at the library under study included online material holds and renewals, online card renewals, self-service copiers and fax machines, and self-checkout stations. In addition, library members had access to an online library card application where they were allowed to pre-register for a library card. The Temporary Research Access Code (TRAC) was also available to library members who would like instant online access to electronic resources such as databases, or downloadable eBooks or audio books. To set-up email notifications or text alerts, update an email address, phone number, or personal identification number (PIN), library members were able to use the Go Green library member portal available on the library's website. SSTs that were available to library associates included self-check-in and sorting equipment. For the purpose of the study, the type of SST examined was self-checkout stations used to borrow library materials.

The Library Expansion Program II launched in December 2010 and included a sorting and a self-service system manufactured by Lyngsoe Library Systems. This sorting and self-service system was first introduced at the Annex location. According to Lyngsoe Library Systems, these "systems provide the most comprehensive automated material handling solutions allowing easy integration to all common library management systems" (Lyngsoe Systems, 2009, para. 1). With great demand, these systems were said to reduce the manual labor time needed to handle the return of library materials, increase efficiency with the maximum use of space, and would result in faster returns to the shelves, while increasing the lending ability of the library (Lyngsoe Systems, 2009).

The introduction of AMH processes in libraries had been beneficial to not only libraries, but also library members. The performance measures outlined in the budget for fiscal year 2015 showed the projected target range for circulation at 9,512,905, in comparison to an estimated 9,388,480 in fiscal year 2014, and an actual circulation of 9,326,377 in fiscal year 2013 (PBC, 2015). In fiscal year 2015, the projected target range for library cardholders was set at 594,895, in comparison to an estimated 593,612 in fiscal year 2014, and an actual 589,005 in fiscal year 2013 (PBC, 2015). Self-service was projected at 85% for fiscal year 2014, compared to an 80% estimate for fiscal year 2013, and an actual 66% in fiscal year 2012 (PBC, 2014). This projected increase in the circulation of materials, cardholders, and self-service use would result in continuous growth of the technological needs of library members for years to come.

Technological advancements formed offered numerous opportunities for service providers to offer their consumers (Gelderman, Ghijsen, & van Diemen, 2011). As for SSTs, they were offered by service providers with the intent to increase their productivity

and efficiency in providing astounding service through avenues that would strengthen satisfaction and trust of the consumer (Meuter, Ostrom, Bitner, & Roundtree, 2003). According to Lin and Hsieh (2007), many service industries had offered consumers the option of making personal choices using advanced technologies without the assistance of service employees. Meuter et al. (2000) regarded self-service as a border of technology that allowed consumers to create a service that allowed them to act independently of direct assistance from a service employee. Additionally, several organizations such as the library system under study, had integrated self-service options primarily to be more efficient and more productive, to decrease the cost of labor, and to explore new options of service offered to their library members. Bitner, Brown, and Meuter (2000) suggested that the greatest challenge to self-service providers lies in their ability to motivate consumers to make the initial step to use the self-services for the very first time. Although there had been a significant increase in the use of SST, very little information was available on the historical experiences that influenced consumers to take the first step when using SST (Lin & Hsieh, 2007; Meuter, Bitner, Ostrom, & Brown, 2005). Wang and Shih (2009) stated that the adoption of technology-based self-service was primarily based on whether or not consumers had the ability to facilitate the new information technology (IT). As per Walker, Craig-Lees, Hecker, and Francis (2002), the ultimate motive was to be able to target the needs of consumers and keep them coming back for additional service.

A wide range of SST options were readily available to organizations with an interest in technology advancement (Meuter et al., 2003). Although the options were available, this did not mean it would be automatically adopted (Liljander, Gillberg,

Gummerus, & van Riel, 2006). The library under study first installed self-service checkout stations in December of 2007, with more installed in July of 2008. Using radio frequency identification system (RFID) technology, the Sentry QuickCheck stations were first installed in the library branches in an attempt to assist library members through the self-checkout process. Of 17 branches, new or renovated, some locations opened with self-service checkout stations, but now every branch had at least one self-service checkout station. According to Sentry Technology Corporation (2010), "QuickCheck stations have an intuitive, flexible design that meets the needs of libraries using electromagnetic (EM), radio frequency (RF), and RFID technology" (para. 1). The final decision to use a SST, however, still rested with consumers and their option of choosing a personal interaction experience or an experience driven by technology (Meuter et al., 2003).

It became a challenge for organizations to convince consumers to embrace the innovation of SSTs (Walker et al., 2002). As a thriving public library system, the southeastern county library under study had set forth goals concerning RFID tagging and the use of self-service checkout stations. Radio frequency identification system security gates were installed in all branch locations. Also, library materials were marked with activated RFID tags that worked simultaneously with RFID security gates. As a performance measurement for fiscal year 2015, the library system set an objective goal to "increase the number of library visits by 1% over fiscal year 2013," with an estimated 4,693,948 visits for 2014, and a projected 4,717,301 visits for 2015 (PBC, 2015, p. 146). Moreover, several branch locations had surpassed their self-check goal of circulated items for fiscal year 2014 in order to meet the estimate percentage of 85%. However, the

percentage of items to be circulated via self-check for fiscal year 2015 was projected and remained at 85%. Those branches that had not reached the self-checkout goal for fiscal year 2014, and remained below 85% for fiscal year 2015, would be the focus of this study. Although there were many publications on the pros and cons of the adoption of SST, it appeared that much needed to be learned about how to positively influence consumers to switch to the usage of SST.

The research problem. The use of SST had increased throughout the years. In comparison to the customary service type provided by a library associate, technology-based service allowed library members to exert their independence unassisted. SSTs were found in many environments and industries, and were introduced in many different forms. The most common form of SST was self-service checkouts. Such self-services were available at gas stations, supermarkets, and online banking. In addition, other self-service checkouts included automated teller machines (ATMs), free-standing kiosks, interactive telephone and voice recognition systems, and online interfaces, all providing consumer value. Fleming and Artis (2010) asserted that consumers who use SSTs were better able to engage in valuable experiences. They also attested to the notion that SSTs supported the retention and satisfaction of consumers.

As for the library under study, since 2004, library use had increased across all programs. According to the budget for the fiscal year 2014, the library system provided access to 1.9 million items in the fiscal year 2014 (PBC, 2015). As revenue for operating expenses showed a slight increase, the library system was working to complete all LEP II capital projects, while maintaining service and meeting the constantly growing public demand for resources. With an estimated 5.27 library visits per capita, and library

members responsible for checking out "more than 9.3 million items from the library in fiscal year 2014," self-service options were changing the way libraries do business (PBC, 2015, p. 146). As the highest annual circulation for the library system to date, 85% was completed using self-service checkout stations (PBC, 2014).

Another industry that used SSTs was grocery stores. Bitner (2001) and Meuter et al. (2000) stated with SSTs, consumers conserved time, monetary funds, and derived satisfaction from the advantages that SSTs offered, including a greater pleasurable experience. Not restricted to consumers, the advantages of SSTs were vast. Curran and Meuter (2007) and Doyle (2007) suggested that by switching to many SSTs such as checkouts, organizations could work on improving their operation, efficiency, and lower general expenditures to provide quality assistance. In utilizing newer technologies, organizations remained viable and lowered operating expenses associated with principal expenses and their employees.

Like libraries and grocery stores, Elliott and Hall (2005) affirmed that with the introduction of SSTs, retailers had gained outstanding transitions in how they provided goods and services. Also, Honebein and Cammarano (2006) advised, in a minimum time frame, organizations could decrease expenditures per transaction by utilizing SSTs and ultimately provide consumers increased services; or for retail companies, reduced prices. Honebein and Cammarano (2006) additionally advised that satisfied consumers and those interacting through SSTs were more unlikely to change to another competitor. Therefore, organizations could brace consumer allegiance using SSTs. The same applies to library systems as service providers. It was of utmost importance that libraries remained pertinent in an ever-changing service industry. MacDonald and Smith (2004) observed,

however, that organizations must educate employees to value and accept SSTs, gain applicable awareness of these technological tools, and motivate consumers to embrace their usage. In order to offer exemplary service to consumers, leaders within an organization must be taught how to incorporate the appropriate blend of technologies to ensure consumer satisfaction (MacDonald & Smith, 2004).

Despite the fact that technology was increasing in importance within the service industry and the lives of consumers, more needed to be learned about how these technologies strengthened competitiveness and what made them attractive to library members primarily within a library environment. Therefore, this study addressed these gaps by providing perception into four main concerns of SST implementation and use in a library system. First, this study examined the previous circumstances that motivated a library member's intent to adopt SSTs in a library environment. Next, this study investigated the fundamental motivation factors, intrinsic and extrinsic, of library members' attitudes regarding SSTs. Third, this study examined why library members might or might not borrow library materials using SSTs. Finally, this study investigated the value of becoming familiar with SSTs, and primarily how this familiarity balanced the relationship that developed among library member attitudes and motivation factors within a library environment.

Deficiencies in the evidence. Meuter et al. (2000) posited that consumers today had changed, and so had their needs. Traditional library service was steadily evolving with the introduction of SSTs. Based on monthly statistics generated by the community relations department with the southeastern county library system; traditional library service has made an advantageous shift in cumulative circulation for fiscal years 2014 to

2015 as of April 2015. Traditional circulation of materials increased from 5,340,809 in 2014 to 5,305,397 in 2015. As for self-service checkout usage, the average percentage of self-service checkout usage for all branch locations was 84% in July 2015 compared to 88% in July 2014 and 85% in July 2013. In July 2015, 9 of 17 branch locations did not meet the projected 85% self-check goal for circulated items.

As service providers, it was paramount that libraries remained actively aware of the reactions of its library members to this new approach. Being aware of the potential conflicts of the introduction of new technology and consumer anxiety was essentially necessary to assist in a smooth transition in providing business as well as conventional service (Meuter et al., 2000). This interaction would be an ongoing process as rapid technology advancements were forthcoming (Curran & Meuter, 2005). It was vitally important for service providers to be fully aware of the mindset of its consumers regarding their current interactions and future experiences with self-service options. Coupled with this, was evidence that supported the frustrations that had been experienced when using technology-based systems (Parasuraman, 2000). It then followed that the adoption of technology-based systems would vary based on the characteristics of each consumer.

Meuter et al. (2003) stated that consumers would avoid using SSTs if they did not feel completely satisfied or ready to use the technology even if they saw the benefit of using the service. It might be assumed that SSTs would totally disrupt the traditional service to which consumers were accustomed to. It was, therefore, advisable to research its potential impact. As an incentive, not only would providers be better equipped to manage system utilization, but they would also gain a deeper insight into what constructs

influence the perceptions of consumers with regard to the use of SSTs. Lin and Hsieh (2007) believed that the advancement of technologies would transform the service culture, develop service operations, strengthen service efficiency, and provide beneficial options for consumers.

Organizations regarded IT as a means for developing their ability to challenge competitors in areas of productivity, profits, and standards of operation. Because of the recent types of research designs employed, specific effects of usage and the influence of individual technologies on the performance of organizations had been difficult to identify (Devaraj & Kohli, 2003). Despite considerable research on the adoption of IT by consumers and organizations from the early days of computerization, research efforts remained mixed and unresolved (Moore & Benbasat, 1991). The reason for unresolved results has been attributed to the lack of foundational theories and the non-existence of specific definitions and constructive measurements (Davis, Bagozzi, & Warshaw, 1989). By using a reliable measurement instrument constructed primarily for the support of this study, it would facilitate the focus on the significance of motivation factors for embracing SSTs in a library environment, similar to the reasonable influence of familiarity and the possible adoption of SST.

Current information on SSTs showed how technology had been viewed in the past and the perceptions that had been formed. By using the key words "library services" and "self-service" within the ProQuest Central database, approximately 55 peer-reviewed, scholarly journals were generated. The relevant number of articles was fewer than 35 when adding the term "technology." When the term "motivation" was added, there was only one article found. Insufficiency in this area implicated the connection between key

motivation factors and SST usage in a library environment. Additionally, not much was known regarding the degree to which the utilization of SST harmonized the link between a library member's attitude and motivation factors regarding the usage of SSTs in a library. Therefore, this research covered several disparities in information about the possibilities of adopting SSTs in a library environment.

Audience

According to Creswell (2012), an "audience consists of individuals and groups who will read and potentially benefit from the information provided in your research study" (p. 70). The targeted audience for this study included current and potential library members. This study proved beneficial to the library director, the assistant director, and division heads within the southeastern county library system under study. A cardinal rule for writing, outlined by Creswell (2012), was to write for the audience. Therefore, data from this study provided an awareness of what was important to library members of a library system when using self-services. As an additional benefit, this study also provided other libraries that might be considering this option with an insight into what SST attributes relate to library members' attitudes regarding utilizing SSTs and their decision to use SSTs within a library environment.

Definition of Terms

Associated with past research, the following definitions were provided for further clarity:

Attitude (A). Attitude was declared by the extent that an individual had a positive or adverse assessment of a specific action that requires some resolution (Ajzen, 1991).

Behavioral intention (BI). Ajzen and Fishbein (1980) interpreted behavioral

intention as the degree to which an individual would choose to adopt a particular type of behavior.

Computer anxiety. Technological apprehension related to computer anxiety might be characterized "as the fear, apprehension and hope people feel when considering use or actually using computer technology" (Scott & Rockwell, 1997, p. 45).

Decision making. Decision making involved the cognitive manner of making an obvious choice from options offered. When striving to choose wisely, an individual must balance the positives and negatives of each choice and review all options. To make an appropriate decision, an individual was required to envision the resulting actions, and strategize as to which choice was suitable for each specific circumstance (Kotler, 2000).

Diffusion. The communicative exchange of novelty using specific courses for a certain amount of time between the representatives of a common societal structure (Rogers, 2003).

Perceived ease of use (PEOU). The overall extent to which someone was convinced that if they use a specific system, no challenges, whether physical or mental, would be experienced (Davis, 1989).

Perceived enjoyment (PE). The scope in which the process of adopting a system was interpreted as being pleasurable in its individual realm, separate from anticipated functioning results (Davis, Bagozzi, & Warshaw, 1992).

Perceived usefulness (PU). The scope to which someone was convinced that utilizing a specific system would improve performance. Davis (1989) referred to this as perceived usefulness.

Radio Frequency Identification System (RFID). According to Yu (2008), a

radio frequency identification system utilized tags that used a packaged microchip and antenna to remotely track inventory, detailed the loan history of consumers, and efficiently supported the circulation and safe handling of library materials.

Self-Service Technology (SST). A technical interface that allowed an individual to create a service independently that excluded the immediate involvement of service employees (Meuter et al., 2000).

Subjective norm (SN). Ajzen (1991) described subjective norm as the belief that societal pressures influenced someone's reaction to execute or not complete an action.

Technology anxiety. Technology anxiety focused directly on an individual's mindset regarding their comfort level and the utilization of technology-based resources. It pointed to the usage of general technological devices, rather than a narrowed focus on anxiety regarding personal usage of computers (Meuter et al., 2003).

Purpose of the Study

While some research has directly focused on consumer behavior with intentions to use SSTs, not much study has gone into the possibility of adopting SSTs in a library environment. Additionally, although earlier studies revealed key motivation factors that impacted the usage of SSTs in many service environments, select few had studied the relationship between SST usage and motivation factors in libraries. Additionally, it was unforeseen whether the user of a SST in a supermarket would utilize a SST to checkout library materials. Regardless of a consumer's decision to use a SST to price an item, or to checkout library materials, there was value in understanding how the use of technology impacted their perception. This study assisted in identifying what factors library members' valued when deciding to use SSTs to checkout materials during their visit and

addressed the possibilities of SST adoption in a library environment.

As a moderating factor for library members, by investigating familiarity with SSTs, this study contributed to existing literature. First, this study offered a valuable observation into how intrinsic motivation factors affected the SST attitudes of library members when visiting a library system. Next, this study also investigated the manner in which library member behaviors were impacted by extrinsic motivation factors when using SSTs in a library. Third, the study offered insight into how the association between intrinsic and extrinsic factors, and attitude was balanced by library member familiarity toward SSTs. Lastly, the study supported the distinct advantages of SSTs to libraries, and highlighted the significance of SSTs to self-service.

By addressing the gaps in the literature with respect to library member attitude and behavior intentions toward SST usage, the purpose of this study was to investigate and examine how library members' attitudes toward SSTs were influenced by different motivation factors, and how familiarity with SSTs influenced the relationship between these motivation factors and attitudes toward using SSTs. To analyze the relationship of a library member's intention and their attitude to use SST, the following objectives of the study included:

Objective 1. Explore motivation factors, whether intrinsic or extrinsic, pertinent to utilizing SSTs.

Objective 2. Examine the impact of motivation factors, whether intrinsic or extrinsic, on the attitudes of library members using SSTs at a library.

Objective 3. Observe the relationship between library members' intention and attitude to use SSTs when checking out library materials.

Objective 4. Evaluate the relationship between motivation factors, whether intrinsic or extrinsic, and the effects of familiarity and library members' attitudes toward using SSTs.

Chapter 2: Literature Review

The inherent benefit of an organization was the determining factor of the extent to which a newly introduced system was utilized (Devaraj & Kohli, 2003). The amount of literature exploring the relationship between motivation factors and SST in a library was limited. Also, not much has been revealed considering the relationship between a library member's attitude and motivational factors, and familiarity with SSTs and use in a library system. This chapter provided an outline addressing the need for further research covering the correlation between SSTs and motivation factors, and the degree to which recognition with SSTs moderated the relationship of library member attitudes and motivation factors when using SST in a library. More specifically, the first section highlighted SST and the rapid development of technology. An overview of the evolution of service delivery, types of SSTs, the relationship between SST and consumer behavior, and the role of technology in the service sector were also explored in this chapter. The subsequent section introduced the theoretical foundation supporting the study, Technology Acceptance Model (TAM). To conclude, gaps in the literature were investigated as they related to the relationships between a library member's intention to use SSTs and their attitude toward self-service.

Self-Service Technology

The evolution of service delivery. There has been a gradual evolution from the traditional dependence on human interaction to the independence of readily available portable electronic services. This transition was similar to experiences in the area of agriculture when the industrial revolution became a reality, and human labor was displaced with automation. This transition first influenced the manufacturing industry and

gradually filtered through to the retail and service industries. The telegraph, telephones, and radios were the main mode of communicating with others from far distances in the late 1800s. It was the financial industry during the late 1960s that was the pioneer of SSTs and ATMs (Ambrus, 2006). SST were regarded as technological interactions that allowed a consumer to control and engage in services independent of employee assistance (Meuter et al., 2003). SST allowed a consumer to independently select the type of service they required unassisted by employed staff (Meuter et al., 2000). The original form of self-service did not offer additional value to an organization or add additional funds. They were primarily labor substitutes. Over time, the demands of consumers and the development of technology created a need for SSTs and were instituted by gas stations, airport checkout booths, and movie and ticket outlets (Ambrus, 2006).

Other industries eventually adopted technology with the intent of becoming more efficient, reducing cost, and increasing the quality of their service. The advancement of the Internet became the stimulus for advanced changes in the type of service now provided by libraries. Automated self-service allowed consumers to make requests online personally. Currently, consumers could now independently attain the increase in service delivery and the accessibility of online data. In addition to self-service available online, libraries like the library under study, had now installed self-service stations that allowed consumers to access numerous types of services from reviewing the catalog to checking out library materials.

Types of self-service technology. As indicated by Meuter et al. (2000), former studies on SSTs focused on the sole technology given in a provided area of study. Likewise, research conducted by Bateson (1985) as well as Langeard, Bateson, Lovelock,

and Eiglier (1981) concentrated essentially on services requiring limited technology such as self-serve vending machines and hospitality services offered by hotels, and older types of ATMs. Meuter et al. (2000) aimed to modify present literature by focusing on more recent forms of relatable software. Examples of these types of technology included interactive kiosks, voice recognition systems, and Internet-based interfaces.

Aside from the Internet and the telephone, electronic kiosks and mobile devices were the most current SSTs available to consumers. Electronic kiosks like self-checkout stations were standalone stalls that provided services and information to consumers (Information Technology & Innovation Foundation [ITIF], 2010). Automated teller machines were the most popular type of electronic kiosk. Banking ATMs were one type of ATM that allowed consumers to review account balances, and make monetary deposits and withdrawals. By choosing the technology advancement of optical character recognition (OCR), ATMs proficiently scanned and expedited the process for deposits. A receipt with the scanned image of the check deposited was printed as a record for consumers using ATMs. As an incentive to using OCR technology, the elimination of deposit envelopes reduced transaction costs. Also, operating costs were reduced by using cash deposits for withdrawals.

The airport kiosk was another popular form of an electronic kiosk. Most airlines used these stalls to allow passengers to receive boarding passes, thereby reducing the expense of having ticket agents at the ticket counter. These kiosks were equipped with screen displays that had touch-screen capabilities, credit card readers, and barcode scanners at various airports worldwide. Also, passengers could retrieve flight information, modify seat selection and reservations, as well as purchase tickets. ITIF

(2010) advised that airline companies were now able to reduce expenditures significantly by using such technologies readily available to consumers. Airlines not only decreased expenditures but also could provide additional influence over the process of passenger arrivals and departures. Also, these stalls allowed passengers to decrease wait time in lines without the need of assistance from an agent. Some stalls also allowed passengers to personally tag checked baggage, forward travel documents to government officials, therefore, allowing passengers to save time and reduce inconveniences (ITIF, 2010).

Self-checkout stations were one of the more common types of electronic kiosks. Since 2008, ITIF (2010) revealed that more than 90,000, self-checkout kiosks were registered as being globally accessible, and a rapid increase was anticipated in the future. Consumers could scan, bag, and purchase items independently without personal assistance. Likewise, these self-checkout stalls were advantageous to both passengers and companies. Companies reduced labor expenses and provided lower costs to consumers while eliminating wasted time.

Kiosks were not only available for the retail industry, but were used by many libraries for self-checkout stations among other self-services that allowed library members to register for a library card, check out materials, renew materials, and place holds online or even pay fines. Like the southeastern county library system under study and in partnership with Lyngsoe Library Systems, libraries like the Kolding Library were "built and equipped in 2005" with their focus on "operational efficiency of the library and on customer service" (Lyngsoe Systems, 2009, para. 3). Aside from self-checkout stations, there were multiple types of electronic kiosks, including self-service parking, tollbooths and gas pumps, vending machines, and kiosks with self-pay options available

to consumers. The Internet remained easily accessible by consumers. Among the various SSTs provided by the Internet, banking online has consistently remained the most valuable to consumers. Online banking was offered by most banks and includes services like bill payment, online deposits, monitoring account balances, and transferring funds (ITIF, 2010).

E-commerce was a highly regarded SST Internet application, more commonly referred to as retailing. Consumers could purchase goods at any time and from anywhere when shopping online using the Internet. Approximately two-thirds of consumers within the United States relied on the Internet to perform searches to research product information before visiting an actual store to make a purchase (ITIF, 2010). Additionally, the Internet allowed companies the exchange of physical to digital purchases like downloadable e-books, music, and movies. As for the library system under study, e-books, online movies, and downloaded music were a few of the digital services offered to library members. Freegal was just one of several digital services offered to library members at the southeastern county library system. Freegal was a free digital music service that offered access to about nine million songs and over 15,000 music videos (Palm Beach County Library System [PBCLS], 2013a). Hoopla Digital was another digital service offered to library members and included complete albums, audiobooks, movies, and other digital resources. As a library member, it was easy to retrieve and use without the bother of having to return checked-out items. Aside from Internet access, the only requirement of library members to utilize these services was a library card (PBCLS, 2013a). As a new digital service, the library system introduced an app-based digital platform, Flipster that was available to library members and provided digital magazines

on a computer or mobile device. Library members could request unlimited titles that were

available without having to be placed on a waitlist or placing a hold (PBCLS, 2013a). In

support of the library system, library members were also able to contribute a portion of

their purchases made with Amazon.com to help with expanding the library collection.

With advanced technologies, companies now utilized the Internet as an integral

component of their customer service strategy and experience. Case in point, consumers

were able to live-chat with a service representative using pop-up messaging. As for the

library system under study, library members could contact any branch location and

directly speak with the circulation or reference desks to assist them with any of their

library-related needs. The library system website offered a direct link to a live one-to-one

homework helpline supported by www.tutor.com for students K-12. Also, financially

supported under the provisions of the Library Services and Technology Act, the library

under study offered virtual information services to county residents via text messaging,

virtual chat, and electronic mail. Ask a Librarian, or what was referred to as The Human

Search Engine, a free online service that allowed library members to speak with a

librarian for immediate assistance. Over 100 libraries statewide offered this service to

their library members and extended the service to library members of other libraries that

participated in this type of service (ITIF, 2010). Service industries like United Parcel

Service (UPS) supplied tracking numbers for consumers to help locate in-transit packages

and the expected time of delivery (ITIF, 2010). Online reservations, ticketing, and

product customization were additional types of Internet-based SST.

Mobile devices were now more prominent for offering the delivery of self-service

software, particularly with the Apple iPhone along with other smartphones. Similarly, to

the services offered by kiosks, the introduction of smartphones had provided helpful assistance by corresponding with online software and allowing consumers the ability to view and price products, purchase products, schedule mobile payments, and conduct mobile banking transactions. Mobile commerce, also branded as m-commerce, was now the quickest Internet platform for SST access (ITIF, 2010). The library system under study offered a variety of electronic resources and software applications that library members could download to their transportable devices. Library accounts were accessible through these applications as well as other mobile adaptations of library materials. Library members were also able to place a hold for new books by simply scanning their barcode or by using their tablet, computer or mobile device, borrow a book, newspaper or magazine, or simply download music.

Other applications that were available to library members included Axis360 AppZone which offered "several apps for accessing e-books and audiobooks," and BookMyne which allowed "catalog searching, placing holds, barcode scanning, social media integration with Goodreads and New York bestseller cross-referencing" (PBCLS, 2013b, para 4-5). Byki, also known as Transparent Language was an app available and allowed library members to "take Byki Online language learning on-the-go" (PBCLS, 2013b, para 6). Online resources were also accessible to library members using Gale, an electronic database, via AccessMyLibrary Public Edition by using Global Positioning System (GPS) that swept within a 10-mile radius, the location of libraries to their existing address and provided access to unlimited online resources provided by Gale. Like Gale, library members could access ReferenceUSA, an electronic database that provided new business opportunities and job listings, listings of research executives and companies, and

the ability to track down addresses and phone numbers. Overdrive was a widely used app by library members and offered audiobooks and e-books remotely to library members by downloading their Overdrive Media Console.

Self-service technology and consumer behavior. To examine consumer behavior, Dabholkar and Bagozzi (2002) and Kim and Forsythe (2010) focused on key factors that influenced the adoption of SST. Such factors included consumers' perceived satisfaction, usefulness, as well as self-efficacy. Consumer creativity and innovativeness were an indication to explore new services and available products (Venkatraman & Price, 1990). This was identified with the longing for new encounters and the attempt to check out new products (Khare, Singh, & Khare, 2010). Both Dabholkar and Bagozzi (2002) and Venkatesh and Davis (2000) identified social impact, self-consciousness, and service interaction with an employee as factors that had an impression on SST adoption. Furthermore, Dabholkar (1996) and Meuter et al. (2000) proposed that since SSTs could diminish interactions between employees and consumers, this prompted further utilization of SSTs.

In earlier studies, Langeard et al. (1981), Bateson (1985), and Zeithaml and Gilly (1987) used consumer profiles to clarify SST acceptance. For example, as an indicator of the appropriation rate for technology-based self-service, Zeithaml and Gilly (1987) analyzed the age of consumers. Likewise, Barczak, Ellen, and Pilling (1997) investigated the descriptive profiles of consumers for their use of self-services as a way to distinguish their level of security consciousness. As indicated by Marr and Prendergast (1993), the emphasis of prior research on technology adoption was primarily on bank ATMs.

As one of the most distinguished studies, Langeard et al. (1981) identified

consumers' willingness to utilize an SST. The analysis conducted recommended that single, more energetic and knowledgeable consumers were better inclined to utilize SSTs. More interestingly, the authors proposed that a consumer's wage level was contrarily linked to a consumer's readiness to utilize SST. In the following years, Nilsson (2007) looked at demographic variables of both Swedish and Estonian consumers—their level of education, age, and sex, as they related to the potential reception of SST. Nilsson (2007) researched online banking use as to what extent and how frequently it had been utilized, and the reason for utilizing SST. Estonian consumers who utilized online banking were predominantly more youthful males who were educationally distinguished. Consumers who did not utilize online banking displayed lower earnings. Consumers who regularly used online banking, and used it regularly, often utilized it to disburse payment for their expenses. Conversely, Swedish SST utilization did not reveal a relationship between online banking use and level of education. Similarly, to the sample received by the Estonians, Swedish online bankers were predominantly young male consumers.

Dabholkar (1992) surveyed consumer attitudes when using automated services and how the requirement of service employee interaction influenced their disposition relating to SSTs. Dabholkar (1996) also observed different attitudes such as controllability, the speed of delivery, usability, and the enjoyment in respect to SST use. Dabholakar's (1996) outcomes received from both studies conducted infer that the most viable factors were consumer enjoyment and the sense of control; to be most influential when attempting to place a delivery order using a computer versus customary servicing.

Research conducted by Dabholkar (1992, 1996) focused on a singular form of technology similar to other studies related to self-service with limited technology. For

example, room service and lodging vending machines held the interest of both Bateson (1985) and Langeard et al. (1981). Interestingly, Meuter et al. (2000) investigated a scope of distinctive SSTs anchored by an academic review of literature, individual perceptions, and the trade press. A dissection of relatable technologies was given, and additionally, the intentions of consumers supported by the viewpoint. As indicated by Meuter et al. (2000), there were various types of SSTs. For example, interactive response systems and free-standing kiosks, online-based interfaces and other online connections, and compact disc (CD) or video technologies were differing types of SSTs. Meuter et al. (2000) speculated that consumers now and again used multiple forms of technology concurrently to settle on a purchase, and organizations who tendered multiple technologies at once, could for that reason, offer services geared toward improvement. Meuter et al. (2000) additionally discerned that organizations supplied SSTs for a multitude of reasons. For example, they gave consumers the option of administering account records or paying an outstanding amount along with the organization's ability to monitor consumer questions.

Elliot and Hall (2005) examined the influence of consumer characteristics on SST usage with a primary focus on consumer attitude. Case in point, not all consumers might be keen on utilizing service kiosks, and consequently, not all consumers would have the same level of response to SSTs. The intentions of using SSTs were noted by Bobbitt and Dabholkar (2001) as positively, directly, and strongly shaped by the attitudes of consumers. Likewise, Venkatesh (2000) attributed a consumer's enjoyment to the ease-of-use when using SSTs. However, both positive and negative responses might be received when using new technologies (Mick & Fournier, 1998). The increased risk during SST transactions might be considered negative consequences when using new

technologies. Research directed by Meuter et al. (2000) revealed that the primary origins for dissatisfaction of consumers who used SSTs were the failure of technology, technology design, or problems associated with the design, and failures that were caused by consumers themselves. Joseph, McClure, and Joseph (1999) also revealed that issues concerning the exactness of transactions, consumer support received, and security were reasons for the perceived dissatisfaction with the quality of service.

Self-service technology and the service sector. Economic policy discussions had always excluded the service sector primarily because of being misunderstood. This might be why the role of technology in the service sector has received so little attention in policy discussions. In part, this had been due to the mistaken belief that the service sector was not important enough to receive serious policy attention. This perception was undergoing a well-needed change. The service sector was now viewed as being significantly important to the economic growth of the United States and would assist in the advancement of its growth. The roles and sources of technology in this sector must be clear and understood.

In modern society, electronic services and web-based information were on the rise. Libraries were more democratically managed to allow for flexible communication and work organization. The development of these services was based on the quality and user-friendliness of the services. Libraries had played a vital, but limited role in agrarian and industrial societies. In this current age of knowledge, libraries should be storehouses of all knowledge, past, and present, making this available to all regardless of geographical boundaries. Currently, advanced IT had supported libraries in surmounting this herculean task. The exchange of knowledge had always been and would continue to

be the main role of libraries.

Theoretical Foundation

       This chapter reviewed four theoretical foundations. This review of theories included the (a) Attitude-Behavior Relationships, (b) The Theory of Reasoned Action (TRA), (c) The Theory of Planned Behavior (TPB), and TAM. Of the four foundations reviewed, TAM was applied theoretically to establish a framework for this study.

       Attitude-Behavior Relationships. Allport (1935) explained, "the meaning of attitude as the most distinctive and indispensable concept in contemporary American social psychology" (p. 798). Despite numerous definitions suggested, Fishbein and Ajzen's (1975) description of attitude as, "a learned predisposition to respond to an object in a consistently favorable or unfavorable manner resides as the most prominent, with the proposition that an attitude encompasses a consumer's disposition, sensitivity, and reactions with respect to an object" (p. 336). Trafimow and Finlay (1996) suggested that attitude was regarded as an important theory used by marketers to better understand their consumers. They added that intentional behavior could be proposed using attitude as a predictor of behavior. Schiffman and Kanuk (2004) suggested that attitude revealed inner emotions that reflected whether a consumer was in favor or against a specific object, and had a considerable effect on one's behavior. Attitude was explained as the understanding of a central tendency to respond constructively or adversely when dealing with an exact object (Schiffman & Kanuk, 2004).

       Attitude referred to a consumer's positive or negative feelings regarding an object that motivated them against or for specific behavior. Because of this, "if attitude can be changed, then intention may be influenced, and subsequently, behavior may be

influenced" (Al-Rafee & Cronan, 2006, p. 239). This interpretation bolstered Trafimow and Finlay's (1996) theory that behavioral intention was indicated by attitude; hence, supporting the belief that attitude greatly influenced consumer decisions. Research correlated to attitude-behavior relationships had been utilized as a part of numerous settings, for example, policymaking, online shopping, and in technology (Morris & Venkatesh, 2000; Venkatesh, Morris, & Ackerman, 2000; Wang, Chen, Chang, & Yang, 2007). Elucidated by three major theories, attitude-behavior relationship studies exposed the facts behind understanding and anticipating consumer behavior: Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), and the Theory of Self-Regulation (Ajzen, 1985; Bagozzi, 1992; Fishbein & Ajzen, 1975). According to Olson and Zanna (1993), Fishbein and Ajzen's (1975, 1980) TRA model and Ajzen (1985) and Ajzen and Madden's (1986) TPB model were the most frequently used models when accessing attitude-behavior relationships within the expectancy-value method.

  Theory of Reasoned Action. As an expansive model first introduced by Fishbein and Ajzen (1975), the modification of TRA was grounded in Fishbein's multi-attribute model based on a consumer's attitude and behavioral intentions (Peter & Olson, 2005). Davis et al. (1989) announced TRA as "an especially well-researched intention model that has proven successful in predicting and explaining behavior across a wide variety of domains" (p. 983). The primary use of the TRA was to assist in understanding the causes of behavior, but this model has been used extensively to predict intentions and behavior (Ajzen & Fishbein, 1980; Bagozzi & Warshaw, 1992). Preceded by a broad examination of the literature on TRA, Sheppard, Hartwick, and Warshaw (1988) discovered that a solid correlation existed among attitude, behavioral intention, and subjective norm, as

they related to consumer behavior based on the influence of willful control. Additionally, the results offered a solid foundation for the projective use of TRA. Ajzen and Fishbein (1980) stated that TRA supported the notion of consumers purposefully reflecting on the resulting consequences attributed to their behaviors, allowing their decisions to be based on the most necessary consequence. As a result, consumers often exhibited behaviors that were deemed ideal or more satisfactory by others as opposed to presenting behavior that was viewed as being disagreeable or loathed by others. The choice then lead to an intentional engagement in the chosen behavior, which was often regarded as the best indicator of actual behavior (Peter & Olson, 2005). Therefore, a consumer's behavior was a result of the intentional decision made to act out that specific behavior.

The TRA suggested that the attitude equation ($A = \sum b_i e_i$) "represents an information processing view of attitude formation and change which posits that external stimuli influence attitudes only indirectly through changes in the person's belief structure" (Davis et al., 1989, p. 984). The subjective norm and attitude of a consumer often dictated their behavioral intention, including comparative weights characteristically predicted by reversion; with behavioral intention explained: "as a measure of strength of one's intention to perform a specified behavior" (Davis et al., 1989, p. 984). As a wide-ranging and noteworthy model, TRA does not assert the beliefs that were considered of assured behavior. Davis et al. (1989) disputed how essential it was "to identify the beliefs that are salient for subjects regarding the behavior under investigation" (p. 984). The actual measures aimed at a specific object, such as behaviors and checking out library materials with SSTs, took place during a situational setting or within an environment at an exact time (Schiffman & Kanuk, 2004). Concerning definite factors and the

requirement of identifying and measuring TRA components, Peter and Olson (2005)

suggested the interested behavior components be revealed. Intentional actions of

consumers were a proposition linking future with self (e.g., "In the near future, I intend to

borrow library materials using SSTs"). Fishbein and Ajzen (1980) suggested that

behavioral intention might be deliberated through investigation to score the possibility of

accomplishing a relevant behavior. As a result, related to the framework of immediate

research, the supporting beliefs of a consumer regarding behavior demonstrated relevant

consequences and in addition to the assessment of these consequences developed a sort of

attitude regarding behavior (Fishbein & Ajzen, 1980). For example, when utilizing SSTs

to borrow library materials, it mimics consumers' overall assessment of acting out the

behavior.

　　　　Fishbein and Ajzen (1980) observed the behavioral intention of consumers to be

forecasted by a subjective norm, which referenced consumers' perception of what other

consumers want them to do or choose not to do. Subjective norms could be addressed

precisely by evaluating consumers' feelings as to what was important to others regarding

their behavioral beliefs. For example, a consumer might be interested in checking out a

book from the bestseller's list using SST. The consumer might wonder what their spouse

would think of this behavior in choosing to use SST over traditional service. Reflection

on whether relevant others might use or might not use SST was indicative of a subjective

norm. Consequently, Schiffman and Kanuk (2004) observed that frequently, researchers

moved away from the subjective norm and proceeded to the hidden influences attributed

to its generation, with the arrival due in part to the evaluation of normative beliefs that

consumers contributed and applied to others, in addition to the consumer's eagerness to

maintain each of the important others. For instance, in the example of borrowing library materials using SST to understand the consumer's subjective norm regarding the wanted transaction, it might need to be recognized that the consumer's beliefs about how each would react to his decision to borrow library materials using SST. Finally, it was also valuable to understand the desire to conform to the perception of the relevant others (Schiffman & Kanuk, 2004).

Along with attitude, a dependent variable holding significant value was behavioral intention. Hebert and Benbasat (1994), concerning the use of SST and the adoption of IT, discovered the nourishment of a relationship between attitude and intention by the unity of two momentous of theoretical models: TRA and the Diffusion of Innovations (Fishbein & Ajzen, 1975; Rogers, 2003). Supplemental research based on consumer attitude and the adoption of technology postulated that a consumer's behavior was easily predicted by their intention (Ajzen, 1991; Sheppard et al., 1988). Additionally, alongside Bagozzi (1981), additional researchers recommended that the relationship between consumer intention and attitude was essential in the exploration of attitudinal research. As an example, Dabholkar and Bagozzi (2002) alluded to a direct impact associated with the intention of consumers when using SSTs, as being dependent upon their attitude toward SST. The behavioral intention of consumers plays an important role as a long-term predictor for the success of a service system; additionally, as a sign of future behavior (Bhattacherjee & Premkumar, 2004; Zeithaml, Berry, & Parasuraman, 1996). Furthermore, in terms of TAM, researchers Dabholkar and Bagozzi (2002), which would be further explored within the study, had supported the relationship between consumer behavior and their intention.

Theory of Planned Behavior. Armitage and Christian (2003) regarded perceived behavioral control to be most influential on both consumer intention and behavior; thereby, resulting in the extension of TPB to TRA. Ajzen (1985) theorized that perceived behavioral control affected behavioral intention and concrete behavior, and suggested an abstract outline to focus on the concern of inadequate control. Ajzen (1985) also discovered the role of perceived behavioral control on the simplicity of how arduous the function of action might be to operate a subject provided. Therefore, perceived behavioral control was attributed to a positive increase in behavioral intention and the possibility to carry out a behavior. Conversely, Leone, Perugini, and Ercolani (1999) proposed that an open path from perceived control and directed toward a behavior was not compulsory in cases that might differ. Ajzen and Madden (1986) included that as an originating path directed from perceived behavior, it was supposed to be in existence solely if a valid substitute of actual control existed in favor of perceived behavioral control, otherwise excluded if the behavior was original to the consumer.

Technology Acceptance Model (TAM). Sharda, Barr, and McDonnel (1988) proposed the utilization of IT to attain great possibilities for improving the work performance of white-collar workers. The result was challenging to evaluate the degree of performance improvement resulting from consumers' reluctance to incorporate and utilize systems that were available to them (Bowen, 1986). Despite the attempt by researchers, Benbasat and Dexter (1986) and Franz and Robey (1986) to examine the posed issue, not many reliable measures were available to assess the key determinants. Despite the extensive consumption of skewed measures practiced, minimal interest had been offered to measure quality and the effectiveness by which they were correlated with

specific usage of responses. DeSanctis (1983), Ginzberg (1981), as well as Srinivasan (1985) realized that there was a noticeable difference in measures and system use, while other investigators like Barki and Huff (1985) discovered that the exercise of associated use varied and was dependent upon the types of measurements utilized. It was, therefore, advisable to create enhanced measures for the theoretical constructs of primary use that applied to the information systems field. Concerning others who aimed to assess consumer needs, as well as system management that desired to evaluate others, the improvement of measures would offer justifiable and dependable data for indicating or explaining system usage. As a result, Davis (1989) sought to present improved measures, referred to as the TAM.

Developed as an information systems theory, TAM exemplified the consent of consumers to adopt and utilize exclusive technology. As the guiding purpose of TAM, the model sought to improve the understanding of the outcome of external factors on consumers' attitudes, intentions, and internal beliefs (Davis et al., 1989). Widely embraced by many researchers, TAM was used as a predictor of technology acceptance by consumers and for the identification of possible design issues of technology. As an adaption of the TRA model, TAM embraced the fundamental order of attitude, intention, behavior and beliefs, originally presented by social psychologists in TRA (Fishbein & Ajzen, 1975).

Davis et al. (1989) suggested that the decisions of consumers were influenced by multiple factors regarding the timing and adoption of a new technology. Associated research by Davis (1989) also concentrated on the reasons for technology acceptance or rejection by measuring the perceived usefulness of a system, and the perceived ease of

use by consumers. Both constructs were seen as essential forecasters for the adoption of a system. As a result, the development of new scales were used to measure perceived usefulness and perceived ease of use by Davis (1989). Davis (1989) described perceived usefulness as when consumers regarded technology as being useful in assisting them to improve and sustain their performance. Therefore, a consumer might be influenced by perceptions of simplicity to operate a technology when accepting or rejecting technology. Davis (1989) defined perceived ease of use as "the degree to which a person believes that using a particular system would be free of effort which follows from the definition of ease; freedom from difficulty or great effort" (p. 320). The perceptions of consumers as they related to ease of use ultimately lead to perceived usefulness. As a result, the perception of usefulness was important in how consumers acquired attitudes toward the use of technical systems (Davis, 1989). Since then, several researchers had shown that TAM reliably clarified the numerous reasons as to why consumers accepted or rejected the use of technical systems (Hausman & Siekpe, 2009).

Davis (1989) additionally offered supportive backing to supplement perceived usefulness and perceived ease of use constructs. A consumer's self-efficacy and beliefs of outcomes were predominantly influenced by their decision to utilize a system. Davis (1989) to support the origin of perceived ease of use marked Bandura's (1982) research on self-efficacy. With regard to Davis (1989), the theory developed by Bandura (1982) "distinguishes self-efficacy judgments from outcome judgments, the latter being concerned with the extent to which a behavior, once successfully executed, is believed to be linked to valued outcomes" (p. 321). Therefore, perceived usefulness was related to the resulting variables based on the outcome, crafted by Bandura (1982).

Beach and Mitchell (1978) and Davis (1989) noted that both perceived usefulness and perceived ease of use were pertinent to the cost-benefit paradigm explained in Behavioral Decision Theory. Attention and clarity were primarily given to accuracy and effort received from the cost-benefit paradigm; this included objective standards of accuracy and effort (Abelson & Levi, 1985; Beach & Mitchell, 1978). Davis (1989) further detailed dissimilarity between objective and subjective choices with regard to functioning were comparable to the difference between perceived usefulness and perceived ease of use.

Innovative research by Tornatzky and Klein (1982) was influential in the development of Davis' (1989) perceived ease of use. Like Rogers (2003), Tornatzky and Klein (1982) examined multiple perceived characteristics of innovations and concluded their meta-analysis of the research results unveiling relative advantage and compatibility to be related to adoption and most meaningful over an extensive area of innovative types. Additionally, Rogers and Shoemaker (1971) explained complexity by describing it as, "the degree to which an innovation is perceived as relatively difficult to understand and use," was equivalent to Davis' (1986) notion of perceived ease of use (p. 154).

Davis' (1986) adaptation of a study focused on channel disposition by Swanson (1982, 1987) played an influential role in perceived usefulness and perceived ease of use. The development of channel disposition by Swanson (1982, 1987) involved the attributed quality of information and the attributed quality of access as two main components that supported the choice and use of information. As a theoretical concept, Davis (1986) proposed channel disposition, in support of perceived usefulness and perceived ease of use, as the two primary variables that influenced the use of systems.

Davis (1986) added that a consumer's perception was increased by time saved, efficiency, and ease of use when utilizing technology. As for SSTs, this could be interpreted as the possibility of an expedient checkout system and shortened handling periods. Enjoyment could be associated with the perception of ease of use by a consumer, which means that a system that might be easily operated might then be more enjoyable. Essentially, as an enjoyable experience, perceived ease of use encouraged consumers to further extend system use (Skadberg & Kimmel, 2004). Consumers were motivated by the SST's ease of usage, especially those who might be resistant to use a system or technology when the perception of usefulness has increased.

Research on service presumed that customer service involved personal interaction between a consumer and an employee. Nevertheless, along with the extensive development of technology, current consumers were frequently exposed to different types of SST. SST had changed how consumers communicated, and the evaluation of sharing or adoption of technology over a vast area of resources had been considered (Rogers, 2003). As an example, demographic dissimilarities and adoption of technology-based service, and characteristics of innovation, including factors that influenced the adoption of SSTs, were factors that influenced the major constructs that had been widely researched (Carr, Zhang, Klopping, & Min, 2010; Van Schaik, Roadford, & Hogg, 2010). Current research highlighted differing outcomes connected to the characteristics of an innovation that might influence consumers' adoption. Examples of characteristics included relative advantage and complexity. Whereas Venkatraman (1991) discovered a significant relationship between relative advantage and innovative adoption, Labay and Kinnear (1981) proposed that a correlation existed between the perceived advantage,

complexity, and compatibility of technology and the adoption of such technology.

As stated by Davis (1989), TAM depended partially on Fishbein and Ajzen's (1975) TRA, mainly because it explained consumers' attitudes and intentions, and the casual relation between perceived usefulness and perceived ease of use. The TRA, however, was conceived to explain human behavior, while TAM revealed only the usage of computers about human behavior (Davis et al., 1989). Aside from other methods and theories such as the self-efficacy theory, Davis (1989) was most dependent upon TRA for the development of measurement scales that revealed whether perceived usefulness and perceived ease of use were determinants of certain behaviors by consumers.

Comparable with TRA, TAM suggested that behavioral intention shaped computer usage, but an insubstantial intention. Behavioral intention within the TAM was the outcome of a consumer's attitude regarding adopting the system and its perceived usefulness, involving comparative importance projected by regression. Therefore, it might be noted that $BI = A + PU$ (Davis et al., 1989). Likewise, subjective norm might not be considered a determinant of behavioral intention in the TAM due to the uncertainty of immediate results of subjective norm on behavioral intention, because of indirect effects attributed through attitude (Davis et al., 1989). Consistent with Davis (1986, 1989), as decisive factors of attitude, perceived usefulness and perceived ease of use with comparative influence, estimated statistically by linear regression as $A = PU + PEOU$. Davis (1986, 1989) hypothesized perceived usefulness as being positively related to attitude. It was also hypothesized that perceived ease of use significantly influenced perceived usefulness as well as attitude; therefore, in addition to other external variables, perceived usefulness was identified by perceived ease of use. Therefore, PEOU +

external variables = PU (Davis et al., 1989). Case in point, there were two self-service systems with equivalent levels of ease when it came to consumer usage; however, one system surpassed the level of performance over the other system. To relate, regardless of the perceived ease of use similarity, a better performing system would probably be recognized as providing valuable use for consumers. Additionally, if a consumer could operate the system successfully, other external variables would probably be influential regarding usefulness.

Bandura (1982) confirmed the value of perceived ease of use by looking at the impact of self-efficacy. Judgments of self-efficacy and outcome beliefs were noted as two determinants of behavior. Bandura (1982) defined self-efficacy as "judgments of how well one can execute courses of action required to deal with prospective situations" (p. 122). Derived from this interpretation, Davis (1989) understood self-efficacy to be comparable to perceived ease of use, and outcome belief to be like perceived usefulness. Davis (1989) also affirmed, "that self-efficacy research provides one of several theoretical perspectives suggesting that perceived ease of use and perceived usefulness function as basic determinants of user behavior" (p. 321). Subsequently, Hill, Smith, and Mann (1987) stated that self-efficacy and outcome beliefs were most influential when consumers were attempting to become skilled at using a computer system.

Researchers Hausman and Siekpe (2009) disclosed that TAM accurately revealed several reasons why consumers accepted or rejected the use of technological systems. Davis (1989) affirmed that when the perception of technology by a consumer increased, the ease of operation was attributed to time saved and efficiency of use. Concerning SST, this indicated a simple operating system that was opportunistic and provided a fast check

out time. An assumption that enjoyment was associated with a consumer's perception of ease existed, and this supported the belief that if the system was easy to operate, then there would be more enjoyment experienced. Perceived ease of use and perceived enjoyment (PE) generated an enjoyable experience that encouraged consumers and motivated them into using a system (Skadberg & Kimmel, 2004). For consumers who were unwilling to adopt the system, by increasing the consumer's perception and the ease of use or PE when using SST, consumers were more motivated to use a system that was unfamiliar to them. Supported by TRA, TAM was used within this study to investigate the correlation that inhabited the attitudes and intentions of consumers to use SSTs.

Operating Variables

Perceived usefulness (PU). Davis et al. (1989) explained perceived usefulness as the potential likelihood of use by a consumer, with the probability of increasing their performance within the realms of an organization. In keeping with the explanation, perceived usefulness was viewed as a determinant of consumer intention and usage behavior. Subramanian (1994) supported perceived usefulness and perceived ease of use as two belief measurements. By considering two opposing technologies, Subramanian (1994) adopted a new data set and revealed perceived usefulness, instead of perceived ease of use, through structural equation modeling (SEM), directly prompted an effect on consumer behavior and usage. For this study, perceived usefulness was synthesized as a library member's belief that self-service checkout machines were favorable and improved the borrowing experience as a member.

Perceived ease of use (PEOU). Past literature confirmed that a relationship existed between attitude, perceived ease of use, and perceived usefulness. For example,

numerous studies had employed a range of measures that computed usage and discovered

uniformity with TAM results, a close relation to attitude existed among its belief

constructs (Burton-Jones & Hubona, 2005; Igbaria, Zinatelli, Cragg, & Cavaye, 1997).

Like Igbaria et al. (1997), Hong, Thong, Wong, and Tam (2002) and Venkatesh and

Davis (2000) evaluated the effects of external variables on perceived ease of use and

discovered the effects to be entirely independent of perceived ease of use. Regarding this

study, perceived ease of use was classified as the extent to which library member's

adoption of self-service checkout stations were perceived as either being easy or

effortless.

Perceived enjoyment (PE). The attitude of a consumer would be positive if the

consumer felt enjoyment with the adoption of new technology. A motivated consumer

would more likely repeat a behavior that was more enjoyable compared to one that was

not enjoyed. Studies by Davis et al. (1989) and Igbaria et al. (1997) implied that

perceived enjoyment considerably affected the intention of consumers to use a computer.

Previous research of the Internet and mobile commerce had through observation and

experiment, included perceived enjoyment along with TAM to foresee consumer attitude,

adoption, and acceptance of a specified system (Bruner & Kumar, 2005; Dabholkar,

1996; Moon & Kim, 2001). Within this study, perceived enjoyment was described as the

extent to which a library member believed that using a self-service checkout station

would prove to be appealing and considered it as an enjoyable experience.

Behavioral intention (BI). The use of a system by a consumer might be

described as a measurement of behavioral intention and the probability that they were

more than likely to adopt a system, whereas TAM adopted real-time use to indicate how

time was measured or the frequency of adoption (Davis et al., 1989). Obtaining an objective measurement of behavioral involvement based on a consumer's intent was difficult and simply impractical. Studies by Dabholkar and Bagozzi (2002) and Vijayasarathy (2004) revealed that theoretical, tried, and proven research existed that details a prominent correlation between a consumer's behavioral intention and the real behavior itself. To maintain methodical precision, this study embraced behavioral intention as a library member's intention to use self-services provided by checkout stations.

Subjective norm (SN). TAM was primarily deduced from TRA, which suggested that a consumer's intention was affected by a consumer's willingness, decision making, attitude, and subjective norm. Subjective norm referenced a consumer's belief that they should act out an expected behavior offered by others who they viewed as being important (Fishbein & Ajzen, 1975). Based on the principles of TRA, intentions were solely impacted by attitude and subjective norms, while with TAM, perceived usefulness, as well as perceived ease of use, were accepted as unswervingly and influenced a consumer's attitude. Davis et al. (1989) discovered subjective norm had no important effect on intentions over perceived usefulness as well as perceived ease of use and as a result, excluded it from the initial TAM.

Attitude (A). Attitude has been widely recognized as the cause of intention. Most consumers currently had been exposed to SSTs and had developed an attitude toward the use of technology, which varied from favorable to unfavorable. Previous experimental studies, for example, Moon and Kim (2001) and Vijayasarathy (2004) revealed this type of general attitude and its influence on the assessment of modern technology in identical

circumstances. In this study, attitude was theorized to the effects of the intention on the actual usage of self-service checkout stations. To this extent, this represented a library member's attitude, whether favorable or unfavorable, toward self-service checkout stations.

Gaps in Literature

Varying types of technology-based services had been successfully introduced and adopted along with traditional types of services. Meuter et al. (2000) categorized independently used technologies as SSTs. Although these services had become a part of everyday life, consumers were still reluctant to embrace new technologies. The reduction of labor costs was an immense attraction for expanding outstanding services with the advancement of SSTs. However, this success could only be gained when consumers were willing to adopt them. It was, therefore, necessary to delve into the significance of motivation factors and their relationships with library members' decisions to use SSTs in a library environment. A consumer's intent to use SSTs remains a new area of study, and much needs to be revealed about what motivates consumers and how satisfied they were with technology. Curran, Meuter, and Surprenant (2003) discovered that the intent to use SSTs was closely linked with attitudes about technology. Even though these services were extensively utilized, the challenge of encouraging consumers to use newly introduced technologies was not an easy task. With the idea of employee replacement with the use of service-based technology, the distinctive features of SSTs, such as standard delivery service, reduction in labor expenditures, increased options for delivery; all displayed outstanding appeal to potential consumers. However, these new technologies would only become successful, as consumers were more willing to embrace

them. Therefore, the best designs must be incorporated and managed, and promoting these technologies were necessary to secure consumer acceptance.

By embracing SSTs, a consumer could handle the utilization process in its entirety. A leading advantage gained was the reduction of any existent difficulties concerning human involvement that might arise between a consumer and a library associate (Weijters, Rangarajan, Falk, & Schillewaert, 2007). Curran et al. (2003) showed that managing fluctuating demands, a primary concern with the involvement of interacting with a human, might be resolved by SSTs; with the regulation of service options by excluding any form of interaction with library associates. Curran et al. (2003) shared although SSTs could benefit efficiency, which included the quality of service with a decreased expenditure; they were restricted to not addressing all concerns. In other words, the anticipation of favorable outcomes received from SSTs might be excessive. Therefore, Rust, Lemon, and Zeithaml (2004) stated that selected organizations were reluctant to work toward increasing or advancing the usage of SSTs.

Consumer satisfaction was a primary theme discussed by Tom and Lucey (1995) while researching the results of SST acceptance and adoption as they related to a service setting. As an example, Weijters et al. (2007) researched the operation of SSTs and how it affected the satisfaction received by a consumer. Anderson and Mittal (2000) indicated consumer satisfaction as a strong determinant of consumer retention of SST usage. Noted as a significant SST outcome variable, Weijters et al. (2007) focused primarily on the perception of consumer wait time, as did Tom and Lucey (1995) who suggested the importance consumers place on the value of time and their assessment of the quality of service. Likewise, Dabholkar (1996), as well as Dabholkar and Bagozzi (2002), studied

consumer attitudes and how they interpreted the value of waiting time regarding SSTs. Weijters et al. (2007), concerning time, explored how SST usage was impacted by the amount of time that consumers remained in a solitary location.

Given the influence of demographics on SST usage by consumers, Weijters et al. (2007) investigated how demographics to include age, gender, and education level of consumers influenced their intentions of using SSTs. Also, Weijters et al. (2007) to assess primary factors influencing attitude toward SST usage also implemented TAM. Like Weijters et al. (2007), the confirmation of information demographically, including age, Morris and Venkatesh (2000) and Venkatesh et al. (2000) also received gender, and education level, and their influence on the adoption of technology.

Even though Weijters et al. (2007) shared the overall satisfaction of consumers when considering the value of wait time, minimal studies exposed the level of satisfaction for SST received by a consumer and how it was affected by the borrowing wait time experienced by a consumer. Therefore, considering various surroundings, Curran and Meuter (2007) measured and analyzed usage by consumers when operating SSTs. For example, the use of ATMs, online banking and banking by telephone. This type of research, however, focused primarily on the grocery and banking industries, unrelated to what was being addressed in this study.

Since consumer SST usage was comparatively a new area of research, the need for further exploration into the effect of SST usage and consumer satisfaction, and the benefits and disadvantages of using SSTs not only for consumers but also for organizations holds great importance. Based on the assessment of perceived usefulness, perceived ease of use, the need for interaction, and potential risk, Curran et al. (2003)

discovered that responses to the use of SSTs positively related to intention to us SSTs. Caution needed to be exercised when introducing new technology, as technologies needed to be carefully structured and efficiently handled. Because of the innovativeness of SSTs, it was unknown how reliable they would perform on an extended basis. Believed to be noteworthy research, Weijters et al. (2007) suggested further research might prove to be interesting on the influence of the perception of wait time and the resulting satisfaction received by consumers when using SSTs.

Although the focus of previous research was geared toward consumer attitudes and their intentions as they relate to SSTs, a limited amount of documented research was available that focused on the potential for adopting SST usage in a library setting. Also, even though previous studies incorporated age, education, gender, race, and finance as important variables impacting the use of SSTs in service or other service environments, the adoption of SSTs in a library environment and the relationship between these variables had not been thoroughly examined (Morris & Venkatesh, 2000; Venkatesh et al., 2000). To address the existing gaps in the literature, this study provided a more detailed understanding of the motivating factors behind the choices made in regards to innovative self-service offered in a library system. More notably, this study focused on how libraries could develop effective strategies that might be introduced within their organization to encourage the use of SST by library members. There was a need to recognize the potential challenges regarding the implementation of SST within library service. Existing theory was strengthened by the findings of the study, and revealed connections that were made. Procedures from the literature were modified and incorporated into this study. The results proposed valid and reliable concepts that had

been researched for future study. Behavioral intention theories provided libraries with options of how to move forward in addressing SST utilization concerns using a more flexible viewpoint. The information that was made available also helped to equip other libraries in making sound decisions regarding the acceptance or rejection of SSTs.

Chapter Summary

In support of this study, this chapter discussed the theoretical framework as well as the development of the constructs to be examined. The purpose of this study was to investigate and examine the significance of motivation factors and their relationships with library members' decisions to use SSTs in a library environment. Where familiarity was a moderating effect, this study offered the TAM model to additionally promote the theoretical relationship between a consumer's attitude when using SSTs and possible motivating factors. Retrieved from existing literature, this study proposed that intrinsic and extrinsic forces influenced consumers' attitudes regarding the use of SSTs and ultimately the intention of the consumer when using SSTs in a library environment. Finally, familiarity with SSTs was proposed as the moderator of the relationship that existed between consumer attitudes and their use of SSTs.

Research Questions

1. What motivation factors are important in using SSTs at a library system?

2. What motivation factors influence the attitudes of library members who use SSTs when visiting a library system?

3. What is the relationship between the attitudes of library members and their intentions to use SSTs when visiting a library system?

4. Does familiarity have an effect on library member attitudes toward SSTs and

motivation factors when visiting a library system?

Chapter 3: Methodology

The research methodology was presented in this chapter. This chapter was composed of four major sections: (a) participants, (b) instrument, (c) procedures, and (d) limitations. The purpose of this quantitative study was to investigate and assess the significance of motivation factors and their relationships with library members' decisions to use SST in a library environment. The TAM was used to theoretically establish a framework for this study. The TAM was used to investigate the relationship between the intention and the attitude of library members to use SSTs.

By addressing existing literature, this study explored the relationship between attitudes and behavioral intentions of library members toward SST at a southeastern county library. This study facilitated an investigation of motivation factors and their importance for a library member's adoption of SSTs. The following objectives supported the purpose of the study and the relationship between the attitudes of library members and their intention to use SSTs:

Objective 1. Explore motivation factors, whether intrinsic or extrinsic, pertinent to utilizing SSTs.

Objective 2. Examine the impact of motivation factors, whether intrinsic or extrinsic, on the attitudes of library members using SSTs at a library.

Objective 3. Observe the relationship between library members' intention and attitude to use SSTs when checking out library materials.

Objective 4. Evaluate the relationship between motivation factors, whether intrinsic or extrinsic and the effects of familiarity and library members' attitudes toward using SSTs.

SST today is well advanced, and as a result, this study added to the ever-increasing knowledge base concerning library members' behaviors as they related to SSTs. To address the research objectives identified, this study examined factors that proved to be influential toward library member attitudes when using SSTs. The investigation provided helpful insight regarding the prospective use of SSTs in a library environment.

Participants

The participants for this study were registered adult library members who used the southeastern county library system under study. The library system, composed of the main library and 16 branches, offered over 1.9 million items, magazines, newspapers, digital video discs (DVD), and music compact discs (CD) (PBC, 2014). According to the library's website, the mission was to "connect communities, inspire thought, and enrich lives" by:

> Providing the public with free access to library materials in a variety of formats, helping people of all ages find information which meets their diverse personal, educational, and professional needs, encouraging children, the future leaders of the community, to develop a love of reading, learning, and libraries, and promoting community enrichment, economic vitality, and individual achievement through reading and life-long learning. (PBCLS, 2013a)

Dattalo (2008) suggested that the discovery of sample size was invaluable and often challenging in planning an experiential study that represented the population. The sample size for this study consisted of 50 participants. According to Davis (2013), by representing a population, "most research can be appropriately covered by sample sizes

of between about 30 and 500, with 500 representing a population of millions" (p. 14). Considering the approximate population of 273,000 actively registered adult library members with the southeastern county library system, the sample size was appropriate. The establishment of a reliable sampling frame assisted in the reduction of errors (Creswell, 2012).

The sampling strategy for this study was non-probability sampling; more specifically, convenience sampling was utilized. Through non-probability sampling, library members were eligible to participate in the study based on their availability, and the convenient representation of specific features to be studied (Creswell, 2012). Actively registered library members benefited from this sampling type, as they also possessed the characteristics that this study addressed. According to Fink (2003), "non-probability samples are chosen based on judgment regarding the characteristics of the target population and the needs of the survey" (volume 1, p. 37). Therefore, participants selected for the study represented diversified age groups, both genders, and various ethnicities. The majority of registered library members were adult registrants. Adult registrants were library members over the age of 18 who resided within the district or were residents of cities in the library cooperative.

Instrument

Edmonds and Kennedy (2013) described the survey approach as the most common form of non-experimental research typically used for collecting important data from a specific group of individuals. Reflecting on the flexibility, the inexpensive cost of data collection, and valuable information collected, a survey approach was deemed suitable for this study. Two types of self-administered questionnaires were used for this

study. Both paper-based and email-based surveys were used as the instrument for this study (see Appendix A). Library members of a southeastern county library system participated in the study by completing a survey through supervised in-person and unsupervised web-based administration. Library members participating in-person completed a 40-question survey. Library members who were not willing to complete the survey in-person were asked to share their email address to complete the unsupervised email-based survey. Surveys completed in-person were collected at the research station set up at the designated library branch location, and the return of unsupervised email-based surveys were requested by email. A participation letter was included with all surveys administered and included the contact information of both the principal and co-investigator (see Appendix B).

Advantages. The advantages of using self-administered surveys for this study included cost, sampling, implementation, and the possibility of addressing sensitive topics. By using self-administered surveys, this study maximized confidentiality and eliminated costs associated with the interview process. In addition to the in-person paper-based surveys administered, the email-based surveys used in this study "allow(ed) for wider geographic coverage, larger samples, and wider coverage within a sample population" (Fink, 2003, p. 10). By using email-based surveys, library members were willing to share "complete and truthful information on sensitive topics" such as the adoption or benefits of using SST (Fink, 2003, p. 10).

Disadvantages. The disadvantages of using self-administered surveys for this study related to questionnaire construction and administration. By using self-administered surveys, the possibility of low response rates had posed as a disadvantage. The objective

and format of the survey were also possible limitations that had affected the response rate of surveys. Lastly, the administration of the survey as it pertained to the lack of control over who responded and the turnaround time it took to receive the email-based surveys also stood as disadvantages to using self-administered surveys.

Procedures

   Design. Fink (2003) described a survey design as a way of organizing the environment in which the survey was implemented. The survey design followed a five-step process of data collection devised by Creswell (2012). After completing the initial step of identifying the participants for the study, participants provided useful information and feedback regarding the purpose of the study. Library members selected for this study were registered adult members at a southeastern county library system who had access to a self-service checkout station available at 17 branch locations including the main library; approximately 273,000 were actively registered adult library members. The contact information of library members was prohibited. Participants of the survey received a letter of participation that requested their willingness to be involved in the study.

   The second step in conducting the study was to receive authorization to proceed. Permission from the library director and the researchers' supervising director, the director of finance and facilities at the southeastern county library system was received. Also, permission from the facilities development and operations department of the respective county overseeing the southeastern library system under study and the Institutional Review Board (IRB) was received. A permit application for non-county facility use was submitted to the facilities development and operations department and approved by the director of the department. Upon receipt of these approvals, the survey commenced at the

main library and three library branch locations, individually representing the North area, Glades area, and the South area.

The third step was to identify the information needed to be collected from library members to conduct the study. Information gathered clarified the significance of intrinsic and extrinsic motivators and library member adoption of SSTs at a southeastern county library system. Seven constructs employed within this study were: (a) intrinsic motivation factors (technology anxiety and perceived enjoyment), (b) extrinsic motivation factors (perceived usefulness and perceived time convenience), (c) library member attitudes, (d) intentions toward SSTs, and (e) familiarity when utilizing SSTs. The instrument was divided into eight sections. Familiarity with SSTs was presented in Section A with five statements, and Section B covered library member attitudes toward technology with 10 statements. For Sections C, D, E, F, and G, a scenario was provided and included 21 statements and questions about perceived enjoyment, extrinsic motivational factors, attitude toward SSTs, behavioral intention, and experience using SSTs. Lastly, four demographic questions were asked in section H.

By utilizing a 5-point Likert-type, semantic differential, ratio, and categorical scales, the survey instrument requested responses from participants based on the statements and questions provided about using SSTs and technology, and their feelings about using SSTs based on the scenarios given. Statement and question content, format, and layout were addressed and included the major constructs that were used in the study. For validation purposes, measurement scales were used when possible for each construct explored. To measure the variables under study, the Likert-type scale ranges used were "strongly disagree" to "strongly agree." Semantic differential scales were used to

measure library member attitudes and their borrowing experience when using SSTs. Semantic, categorical and ratio scales were used to assess the borrowing experience of library members when using SSTs. Demographic information was sorted using categorical scales. In support of this study and its purpose, the instrument addressed motivation factors that influenced the attitudes of library members when using SSTs. Concluding the administration of the survey, library members were thanked for their time and willingness to participate in the study.

According to Litwin (2003), "Pilot testing is one of the most important stages in the development of a new survey instrument" (volume 8, p. 57). In preparation for the study, a pilot study was conducted to ensure the adequacy of the research instrument used. By conducting a pilot study, this confirmed that individuals in the sample understood all statements and questions asked, and could effectively complete the survey (Creswell, 2012). Reviews of the survey were conducted by circulation managers who had similar characteristics of the population and represented the various subgroups of the intended sample. A meeting was scheduled to meet with each participant. Upon meeting with each participant, the pilot test was administered following a similar approach to how the survey instrument would be administered for actual data collection. Likewise, participants of the pilot study were given a participation letter and a brief description of the study. Also, they were asked to give their written feedback directly on the printed survey instrument provided. Pilot study participants were instructed that if they had any questions while reviewing the instrument relating to the phrasing, content, outline, structure or arrangement of statements and questions, or difficulty with the directives, to ask freely. In doing so, this allowed for the documentation of any noticeable hesitations,

as well as the ability to answer any questions that needed clarification. Participants were also advised that following the completion of the survey instrument, the researcher would ask a few follow-up questions. Such questions included if he or she understood each question and response choices designated.

Together, the pilot study participant and the researcher reviewed all survey statements and questions, and for each one, the researcher asked the participant for their understanding of what each statement read or question asked, if the wording was comprehensible or if further clarity or revision of the question was needed. Close attention was paid to the statements and/or questions that posed hesitation from participants. Considering the diverse population of potential survey participants, pilot study participants were asked about cultural sensitivity and relevance of the survey regarding library culture in an attempt to avoid anything objectionable in the survey. To conclude the meeting, participants were asked if the sequence of statements or questions either encouraged or discouraged their desire to complete the survey. Feedback and suggestions received from the pilot study were used as a guideline to tweak the instrument to minimize errors that had arisen during the implementation of the actual survey.

The fourth step of the study was to determine what method should be adopted for collecting data. Creswell (2012) explained that survey research design was the method used in quantitative research by researchers to survey a cross-section of the population or the entire population about their attitudes, thoughts, and individualities. To cover the southeastern county library system, a cross-sectional survey design was implemented within this study. Fink (2003) described a cross-sectional design as a "description or

portrait of one group's opinions at a particular time" (volume 1, p. 31). This collection of quantitative data using surveys identified similarities from responses, which would challenge specific research questions or supposition (Creswell, 2012). Based on the parameters and recommendations from previous literature covering SST, the survey instrument comprised 40 statements and questions that were adapted for this study.

Directed by the feedback received from the pilot study, the survey objectives outlined, and the support offered by four research questions, an extensive development of the survey instrument was conducted by the researcher and both formative and summative committees to assess its reliability and validity. The formative committee included three, branch circulation managers who represented the library branch system, as well as who were experts in the field of library services, and who would provide feedback during the development process. Survey statements and questions were kept short and specific rather than general to avoid double-barreled questions, vague qualifiers, jargon, or abstract terms that might mislead library members. Demographic questions concluded the survey to avoid boredom or any negative dispositions when completing the survey. Additionally, before completing the survey, library members were asked to review a scenario provided. The scenario read as follows:

Imagine you are visiting a library to check out materials. When you're ready to check out your materials, you notice that you have two options:

1. Check out your materials at the circulation checkout counter with a library member specialist, or

2. Use a self-checkout station that is located near the circulation checkout counter. The self-service station has a user-friendly tutorial available to help expedite the

check-out process.

You are contemplating the use of the self-checkout station, and have been instructed that radio frequency identification system (RFID) tags would be removed when using the self-service station. If there was any difficulty in using the station, a library member specialist is available at your request.

In an attempt to increase the response rate, a few strategies were implemented to motivate library members to complete the survey. The participation letter explained the importance of the survey, stated that responses were confidential, confirmed their participation as an adult registered library member who was 18 years of age or older, and explained how the results would be used. By limiting the survey to 40 easy-to-follow statements and questions, only relevant statements and questions, with clear and simple language were asked.

The fifth step of the survey was the identification of the procedures that were followed when collecting data. The survey research station was located outside of the building of the main library and each representative branch location for the library system under study. Each station was strategically assembled to allow for a diverse group of registered adult library members, 18 years of age or older. The station was assembled and accessible on specific days and times within the week, and the weekends. Specifically, these days and times were Mondays, Tuesdays, and Fridays from 5 p.m. to 7 p.m., and Saturdays from 12 p.m. to 2 p.m. The research stations operated for a total of 60 days, with 8 weeks divided between all four branch locations.

The 60-day timeframe incorporated the busiest times of each library location and allowed all registered adult library members the opportunity to participate. Based on their

willingness to participate in the study, as library members entered and exited the building, adult library members were asked whether or not they were registered users of the library system and were 18 years of age or older. If library members answered yes to both requirements, and they agreed to participate in-person, they were handed the survey by the researcher. Library members, who were not willing to complete the survey in-person, were asked to share their email address to complete the unsupervised email-based survey. Surveys completed in-person were collected at the research station set up at the library branch location, and the return of unsupervised email-based surveys were requested by email. For adult library members who were not registered, they were advised that they were not eligible to complete the survey. The completion of the survey took approximately 10-15 minutes. Once library members completed the survey in-person, they returned it to the research station. Once the survey was returned to the research station, the participant's role in the study was complete. The same goes for unsupervised email-based surveys, once a completed survey was received via email, the participant's role in the study was complete.

Data analysis. Creswell (2012) suggested that the groundwork of numeric data for analysis of statistics was a prerequisite of quantitative information analysis and interpretation. The second step was analyzing the data. Statistical data must be analyzed to ensure it would provide descriptive and conclusive results. The subsequent action was to reveal the results through tables and a discussion regarding each statistical analysis. The final step was the interpretation of results by restating general findings and through comparisons of past literature. Creswell (2012) further suggested that the potential limitations of the study should be kept in mind, as well as the development of ideas that

would support and extend future research.

To organize and analyze survey data, a data management plan was developed. First, data were coded by using a codebook containing descriptions of the statements and questions, codes, and variables associated with the survey. The codebook listed each variable, all answer choices regarding each question, and the numbered code allotted to each answer option. Before entering the data, surveys were reviewed to see if there were any problems with missing data. Surveys were reviewed at the time of completion to ensure all sections inclusive of statements and questions were answered. For statistical analysis and to streamline the data preparation stage, the Statistical Package for Social Sciences (SPSS) was used to identify any suspicious or invalid cases, variables, and data values. The statistical software also viewed patterns of missing data, summarized variable distribution, validated data, and prevented outliers from skewing analyses. As a secondary precaution, data was spot-checked by checking for data-entry and coding errors using a comparison between raw data and electronically entered data.

To answer the four objectives, the analysis of data was based on seven constructs of perception. Intrinsic motivators, including technology anxiety and perceived enjoyment, were two constructs of perception. For extrinsic motivation, perceived usefulness and perceived time convenience were two additional constructs of perception. Library member attitude, behavioral intentions, and familiarity with SSTs at a library were three additional constructs of perception. As two dimensions of intrinsic motivation, perceived enjoyment and technology anxiety was measured in Sections B and C with 15 statements. The statement, "When I think of technology-based systems, they intimidate me" was an example of one of the 10 statements asked to assess technology anxiety. The

statement, "I find the use of SSTs to be fun" was an example of one of the five statements asked to assess perceived enjoyment. The statements referring to technology anxiety and perceived enjoyment would be assessed on a 5-point Likert-type scale and be relevant to library members' extent of agreement with each statement given. Scale ranges included "strongly disagree, disagree, neutral, agree, strongly agree," where when scoring, a lower level of anxiety would be indicated by higher recorded scores.

Perceived usefulness and perceived time convenience were measured in Section D with eight statements. The questions, "SSTs are useful when checking out library materials," and "When visiting the library, SSTs would allow me to quickly accomplish tasks" were two examples of statements asked to assess perceived usefulness and perceived time convenience. Like the statements referring to technology anxiety and perceived enjoyment, the statements for both extrinsic motivation factors were assessed using a 5-point Likert-type scale and related to library members' extent of agreement to each statement provided; where higher scores indicated higher levels of perceived usefulness and perceived convenience.

Based on the scenario provided, attitude toward using SSTs was measured in Section E by requesting participants to respond to a statement using a semantic differential scale. The statement, "As it relates to self-service technology, I would describe my feelings as," was used to assess library member attitudes when using SSTs. Behavioral intentions of library members were measured in Section F with three statements requesting the library member's agreement or disagreement about using SSTs. The statement, "In the near future, I intend to borrow library materials by using SSTs" was an example of a statement asked to assess the behavioral intention of library

members. Responses to the statements were measured on a 5-point Likert-type scale and varied from "strongly disagree" to "strongly agree." Lastly, familiarity with SSTs was measured in Section A, with five statements. An example statement was "I am comfortable and familiar with self-service checkouts." Using a 5-point Likert-type measurement scale, statements related to library members' extent of agreement ranged from "strongly disagree" to "strongly agree." Section G included four additional questions that supported the borrowing experience of library members when using SSTs. Case in point, a particular question asked: "Are you familiar with the self-service technology offered at the library?" This question was assessed using endpoints on a 5-point semantic differential scale, to include "not familiar" and "extremely familiar." The ensuing and third questions asked, "Have you ever used SSTs offered at your library to borrow materials?" and "How would you describe your experience with using SSTs?" Both questions were measured using a categorical scale. The fourth question, "On average, how many times in a month do you use SSTs when checking out your library materials?" assessed how often the library member used SST using a ratio scale. Demographic information was measured in terms of gender, age, ethnicity, and level of education, and was assessed through categorical scales.

As a branch of survey research, psychometrics addressed the development of a survey (Litwin, 2003). A typical psychometric study questioned whether a survey adequately measured what it intended to measure. Researchers and evaluators had much to gain from understanding psychometrics by choosing suitable surveys, and evaluating whether these surveys were fulfilling the intended requirement. Many techniques had been developed for testing surveys. Although many techniques existed, two main

methods to attaining credibility of a given survey were reliability and validity. Litwin (2003) defined reliability as "the statistical measure of the reproducibility or stability of the data gathered by the survey instrument" (p. 6). Understanding the importance of reliability assisted in ensuring that a survey produced equal or similar outcomes over time and within specific social contexts. Several procedures might be used to identify the reliability of a survey. Descriptive analyses, including frequency, means, and other analyses were first sequenced on the data collected. Before subsequent forms of analysis, Cronbach's alpha was used to evaluate reliability.

Reliability often speaks of the consistency and stability of data collected. Validity, however, referenced the accuracy of the inferences or translations derived from the data collected. According to Litwin (2003), "In addition to determining reliability, you must assess the validity of items, scales, and whole survey instruments" (p. 31). Validity confirmed whether the survey had accurately embraced the concept of interest. Litwin (2003) defined "face validity, content validity, criterion validity, and construct validity" as four distinct types of validity. To address validity, face validity, or the "casual review of how good an item or group of items appears" and content validity, or the "formal expert review of how good an item or series of items appears" was used in this study (Litwin, 2003, p. 43).

The assessment of validity was used to engage both formative and summative committees. They were asked to review the drafted criteria and assist in preparing the criteria for the survey. The formative committee was responsible for ensuring the face and content validity of the survey. The summative committee consisted of three field experts, the researcher's assigned dissertation committee chair, the director of finance

and facilities who was my direct supervisor overseeing the study, and the director of system services for the library system. They were asked to review the criteria developed with the assistance of the formative committee. The responsibility of the summative committee was to compare the final survey to established criteria and provide suggestions about how the survey might be improved.

Limitations

Many factors contributed to the restrictions of this research. According to Creswell (2012), as potential weaknesses or problems, "limitations often relate to inadequate measures of the variables, loss or lack of participants, small sample sizes, errors in measurement, and other factors typically related to data collection and analysis" (p. 199). However, Fink (2003) stated that no sample was truly perfect and generally, "samples have some degree of bias or error" (volume 1, p. 35). Reliability and validity were significant regarding experimental results. As a potential limitation, the study was restricted to four library branch locations at a southeastern county library system, and focused on only one type of SST offered, the self-service checkout. Consequently, the results did not accurately represent other library branches or comparable library systems. As an additional restraint, the population and sample size were small compared to other library systems.

According to Creswell (2012), the reliability of instrument scores should be stable and consistent. As an additional drawback, the format of the survey affected the responses of participants, and therefore, influenced the outcome of the study. A disadvantage of using self-administered surveys for this study was related to the construction and administration of the questionnaire. By using self-administered surveys,

the possibility of low response rates posed a limitation. The objective and format of the survey were also possible restrictions that also affected the response rate of surveys. The administration of the survey as it pertained to the lack of control over who responded and the turnaround time to receive the email-based surveys also stood as disadvantages to using self-administered surveys. Using a single measure allowed for possible measurement error thus influencing the results of the study. As a result, the internal consistency of the survey structure was questioned.

Threats to validity also affected the accuracy of the results drawn. Creswell (2012) noted "statistical conclusion validity, construct validity, internal validity, and external validity" as four types of validity (p. 303). According to Creswell (2012), threats to internal validity might be related to the participants, treatments, or procedures. The study's internal validity was affected by the availability of library members to complete the survey. Library members who were in a hurry might not take the time to accurately complete the survey, in turn affecting the reliability and validity of the study. Like internal validity, Creswell (2012) also noted potential threats to the external validity between treatment and the interactions of selection, setting, and history. Lastly, as an inadequacy, the stress levels of participants after using a self-service checkout station and other outside factors influenced their responses to the service statements and/or questions asked. However, each of these limitations and threats were viewed as being insignificant to the success of the study.

Chapter 4: Results

Introduction

The chapter presented an analysis of the survey data collected from library members at a southeastern county library system regarding the influence of motivation factors and their relationships with library members when using self-service technology. The analysis of data was based on seven constructs of perception. Intrinsic motivators to include technology anxiety and perceived enjoyment were two constructs of perception. For extrinsic motivation, perceived usefulness and perceived time convenience were two additional constructs of perception. Library member attitudes, behavioral intentions, and familiarity with SSTs were three additional constructs of perception that would be detailed further in this chapter. All survey participants were registered adult library members of the southeastern county library system under study.

This chapter reported the data and the results of the statistical procedures used to determine the perceptions of library members into four main concerns of SST implementation and use in a library system. This included the previous circumstances that motivated a library member's intent to adopt SSTs, the motivation factors, intrinsic and extrinsic, of library members' attitudes regarding SSTs, why library members might or might not borrow library materials using SSTs, and the value of becoming familiar with SSTs, and how this familiarity would balance the relationship that developed among library member attitudes and motivation factors within a library environment. A description of the sample, along with demographic characteristics and responses to the research questions, were included in this chapter.

The survey instrument used was comprised of 40 statements and questions,

including a scenario that was adapted for this study and based on the Technology

Acceptance Model (TAM). The survey instrument requested responses from participants

based on the statements and questions provided about using SSTs and technology, and

their feelings about using SSTs based on the scenarios given. Survey data entered into

SPSS represented demographics and attitudes regarding library members and self-service

technology services offered. The presentation format of this data was through tables that

presented findings and answered the posed research questions. After errors for data entry

were examined, output was determined. Errors were checked using frequency

distributions for irregularities, one question at a time. The data were also examined to

determine similar themes for results. Results were based on a total of 50 responses from

library members at a southeastern county library system and were displayed in tables.

Furthermore, the breakdown of the results answered each particular research question.

Demographic Characteristics

Data were collected from library members at a southeastern county library system

during November 2017 and January 2018. Fifty participants completed the survey. Tables

1 through 4 summarized the demographic characteristics of participants of the study. The

final sample (n = 50) was composed of 33 females (66.0%) and 17 males (34.0%). The

age range of participants varied, with ages 35 to 44 being the majority. Four participants

were between the ages of 18 and 24, 13 participants were between the ages of 25 and 34,

14 participants were between the ages of 35 and 44, 8 participants were between the ages

of 45 and 54, 3 participants were between the ages of 55 and 64, 6 participants between

the ages of 65 and 74, and 2 participants were 75 years or older. The majority of

participants were Caucasian/White (n = 17, 34.0%), followed by African

Americans/Black (n = 16, 32.0%), Hispanic/Latino (n = 8, 16.0%), Other (n = 8, 16.0%), Asian/Pacific Islander (n = 1, 2.0%), and Native American/American Indian (n = 0, 0%), respectively. As for the highest level of education, the majority of participants were college graduates (n = 19, 38.0%) or had some college experience (n = 12, 24.0%). Other levels of education included post/graduate study (n = 11, 22.0%), graduated high school (n = 6, 12.0%), vocational/technical school (n = 1, 2.0%), and high school or less (n = 1, 2.0%).

Table 1

Library Member Demographics by Gender

Library Member Gender	Frequency	Percent	Cumulative Percent
Male	17	34.0	34.0
Female	33	66.0	100.0

Table 2

Library Member Demographics by Age

Library Member Age	Frequency	Percent	Cumulative Percent
18-24 Years Old	4	8.0	8.0
25-34 Years Old	13	26.0	34.0
35-44 Years Old	14	28.0	62.0
45-54 Years Old	8	16.0	78.0
55-64 Years Old	3	6.0	84.0
65-74 Years Old	6	12.0	96.0
75 Years or Older	2	4.0	100.0

Table 3

Library Member Demographics by Ethnicity

Library Member Ethnicity	Frequency	Percent	Cumulative Percent
Caucasian/White	17	34.0	34.0
Hispanic/Latino	8	16.0	50.0
Asian/Pacific Islander	1	2.0	52.0
African American/Black	16	32.0	84.0
Native American/American Indian	0	0.0	0.0
Other	8	16.0	100.0

Table 4

Library Member Demographics by Education

Library Member Education	Frequency	Percent	Cumulative Percent
Some High School or Less	1	2.0	2.0
Graduated High School	6	12.0	14.0
Vocational/Technical School	1	2.0	16.0
Some College	12	24.0	40.0
Graduated College	19	38.0	78.0
Post-Graduate Study	11	22.0	100.0

Motivation Factors and Self-Service Technology

Data from this section answered the first research question. What motivation factors are important in using SSTs at a library system? When analyzing self-service technology and technology anxiety, findings from the data showed that 44% of library members agreed that learning technology-related skills would not be difficult. Conversely, 4% of library members strongly disagreed, as well as 4% disagreed that learning technology-related skills would not be difficult. Likewise, findings from the data

showed that 44% disagreed that they often avoided technology because they were not familiar with it. However, 2% strongly agreed that they avoided technology because they were not familiar with it. These findings suggested that a large number of library members did not find learning technology-related skills as being difficult and they were willing to use technology even though they might not be familiar with it. Lastly, results related to learning technology-related skills and familiarities with technology by percentage were in Tables 5 and 6.

Table 5

Self-Service Technology and Technology Anxiety – Learning Technology-Related Skills

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	4.0	4.0
Disagree	2	4.0	8.0
Neutral	7	14.0	22.0
Agree	22	44.0	66.0
Strongly Agree	17	34.0	100.0

Table 6

Self-Service Technology and Technology Anxiety – Familiarity with Technology

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	14	28.0	28.0
Disagree	22	44.0	72.0
Neutral	10	20.0	92.0
Agree	3	6.0	98.0
Strongly Agree	1	2.0	100.0

When analyzing self-service technology and perceived enjoyment, findings from the data showed that 40% of library members agreed that the use of SSTs were fun.

Conversely, 4% of library members strongly disagreed that the use of SSTs were fun. Likewise, findings from the data showed that 58% agreed that the use of SSTs were enjoyable. However, 2% of library members strongly disagreed that the use of SSTs were enjoyable. These findings suggested that the majority of library members found the use of SSTs to be fun and enjoyable. Lastly, results related to self-service technology and being fun and enjoyable by percentage were in Tables 7 and 8.

Table 7

Self-Service Technology and Perceived Enjoyment – Self-Service Technology as Being Fun

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	4.0	4.0
Disagree	4	8.0	12.0
Neutral	11	22.0	34.0
Agree	20	40.0	74.0
Strongly Agree	13	26.0	100.0

Table 8

Self-Service Technology and Perceived Enjoyment – Self-Service Technology as Being Enjoyable

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	2.0	2.0
Disagree	2	4.0	6.0
Neutral	11	22.0	28.0
Agree	29	58.0	86.0
Strongly Agree	7	14.0	100.0

When analyzing self-service technology and perceived usefulness, findings from the data showed that 50% of library members agreed that SSTs were useful when

checking out library materials. Conversely, 2% of library members disagreed that SSTs were useful when checking out library materials. Likewise, findings from the data showed that 40% strongly agreed that their experience with borrowing library materials was enhanced when using SSTs. However, 2% of library members strongly disagreed that their experience with borrowing library materials was enhanced when using SSTs. These findings suggested that half of the library members saw SSTs as being useful when checking out library materials. Also, these findings suggested that most library members' experience with borrowing library materials was enhanced when using SSTs. Lastly, results related to the usefulness of self-service technology when checking out library materials and the enhancement of library member experience when using self-service technology by percentage were in Tables 9 and 10.

Table 9

Self-Service Technology and Perceived Usefulness – Usefulness of Self-Service Technology When Checking Out Library Materials

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	0	0.0	0.0
Disagree	1	2.0	2.0
Neutral	4	8.0	10.0
Agree	25	50.0	60.0
Strongly Agree	20	40.0	100.0

When analyzing self-service technology and perceived time convenience, findings from the data showed that 52% of library members strongly agreed that when visiting the library, SSTs allowed them to quickly accomplish tasks. Conversely, 2% of the library members strongly disagreed, as well as 2% disagreed that when visiting the library, SSTs allowed them to quickly accomplish tasks. Likewise, findings from the data showed

Table 10

Self-Service Technology and Perceived Usefulness – Enhancement of Library Member
Experience When Using Self-Service Technology

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	2.0	2.0
Disagree	6	12.0	14.0
Neutral	5	10.0	24.0
Agree	18	36.0	60.0
Strongly Agree	20	40.0	100.0

that 46% strongly agreed that SSTs allowed them to check out materials faster. However,

2% of library members strongly disagreed, as well as 2% disagreed that SSTs allowed

them to check out materials faster. These findings suggested that over half of the library

members felt that when visiting the library, SST allowed them to quickly accomplish

tasks. Similarly, these findings also suggested that SST allowed members to check out

materials faster. Lastly, results related to the accomplishment of tasks when using self-

service technology and increase in speed when checking out library materials by

percentage were in Tables 11 and 12.

Table 11

Self-Service Technology and Perceived Time Convenience – Accomplishment of Tasks
When Using Self-Service Technology

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	2.0	2.0
Disagree	1	2.0	4.0
Neutral	6	12.0	16.0
Agree	16	32.0	48.0
Strongly Agree	26	52.0	100.0

Table 12

Self-Service Technology and Perceived Time Convenience – Increase in Speed When Checking Out Library Materials

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	2.0	2.0
Disagree	1	2.0	4.0
Neutral	7	14.0	18.0
Agree	18	36.0	54.0
Strongly Agree	23	46.0	100.0

Influence of Motivation Factors on Library Member Attitudes

Data from this section answered the second research question. What motivation factors influence the attitudes of library members who use SSTs when visiting a library system? Library member attitudes toward self-service technology were first examined in these data followed by the influence of motivation factors on library member attitudes. When analyzing self-service technology and library member attitudes, findings from the data showed that 80% of library members described their feelings towards SST as good when visiting the library to check out materials. Conversely, 2% of library members described their feelings toward SST as bad when visiting the library to check out materials. Likewise, findings from the data showed that 74% liked using SST to check out library materials, whereas, 2% disliked using SST to check out library materials. About 78% of library members felt the use of self-service technology to be beneficial, while 2% of library members felt it was more harmful. Also, 70% of library members considered the use of self-service technology to be favorable compared to 2% of library members who deemed the use of self-service technology to be unfavorable. These findings suggested that nearly all library members described their feelings towards SST

as good when visiting the library to check out library materials. Furthermore, these findings also suggested that over 70% of library members liked using SST to check out library materials, felt the use of self-service technology to be beneficial, as well as considered the use of self-service to be favorable. Lastly, results related to library members and their attitudes toward self-service technology by percentage were in Tables 13, 14, 15, and 16. This included the following descriptors, bad to good, dislike to like, harmful to beneficial, and unfavorable to favorable.

Table 13

Self-Service Technology and Library Member Attitudes – Bad to Good

Library Member Response	Frequency	Percent	Cumulative Percent
1 Bad	1	2.0	2.0
2	1	2.0	4.0
3	3	6.0	10.0
4	5	10.0	20.0
5 Good	40	80.0	100.0

Table 14

Self-Service Technology and Library Member Attitudes – Dislike to Like

Library Member Response	Frequency	Percent	Cumulative Percent
1 Dislike	1	2.0	2.0
2	1	2.0	4.0
3	6	12.0	16.0
4	5	10.0	26.0
5 Like	37	74.0	100.0

Table 15

Self-Service Technology and Library Member Attitudes – Harmful to Beneficial

Library Member Response	Frequency	Percent	Cumulative Percent
1 Harmful	2	4.0	4.0
2	1	2.0	6.0
3	1	2.0	8.0
4	7	14.0	22.0
5 Beneficial	39	78.0	100.0

Table 16

Self-Service Technology and Library Member Attitudes – Unfavorable to Favorable

Library Member Response	Frequency	Percent	Cumulative Percent
1 Unfavorable	2	4.0	4.0
2	1	2.0	6.0
3	6	12.0	18.0
4	6	12.0	30.0
5 Favorable	35	70.0	100.0

To explore the influence of motivation factors on library member attitudes, the data featured the following constructs under study: (1) technology anxiety, (2) perceived enjoyment, (3) perceived usefulness, and (4) perceived time convenience. Results from the data were based on a scenario provided and measured using a 5-point Likert-type and semantic differential scale. When analyzing library member attitudes and technology anxiety, findings from the data showed that library members who described their feelings toward SST as bad, also strongly disagreed (n = 1) that when it came to technological matters, they had some difficulty understanding some matters. Conversely, library members who described their feelings toward SST as good, also strongly disagreed (n =

11), disagreed (n = 11), as well as agreed (n = 11) that when it came to technological matters, they had some difficulty understanding some matters. Likewise, findings from the data showed that library members who disliked SST when visiting a library to check out materials also agreed (n = 1) that sometimes they felt apprehensive when using technology. Library members who liked SST when visiting a library to check out materials, also strongly disagreed (n = 15) that sometimes they felt apprehensive when using technology. Library members who described SST as harmful when visiting a library to check out materials, also disagreed (n = 2) that when using technology, they often hesitated because they feared to make mistakes that they might not be able to correct. Library members who described SST as beneficial when visiting a library to check out materials, also disagreed (n = 22) that when using technology, they often hesitated because they feared to make mistakes that they might not be able to correct. Library members who were unfavorable to using SST when visiting a library to check out materials, strongly disagreed (n = 1) as well as disagreed (n = 1) that when they think of technology-based systems, they were intimidated. Also, library members who were favorable to using SST when visiting a library to check out materials, disagreed (n = 14) that when they think of technology-based systems, they were intimidated. Lastly, results related to library members and their attitudes toward technology anxiety, whether bad to good, dislike to like, harmful to beneficial, or unfavorable to favorable by the number of members were in Tables 17, 18, 19, and 20.

Table 17

Library Member Attitudes and Technology Anxiety – Bad to Good

		Technology Anxiety				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Bad	1	0	0	0	0
	2	0	1	0	0	0
	3	1	0	2	0	0
	4	0	2	1	1	1
	5 Good	11	11	7	11	0

Table 18

Library Member Attitudes and Technology Anxiety – Dislike to Like

		Technology Anxiety				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Dislike	0	0	0	1	0
	2	1	0	0	0	0
	3	1	1	1	3	0
	4	0	2	1	1	1
	5 Like	15	8	5	6	3

When analyzing library member attitudes and perceived enjoyment, findings from the data showed that library members who described their feelings toward SST as bad also were neutral (n = 1) about the use of SSTs as being pleasurable. Conversely, library members who described their feelings toward SST as good, also agreed (n = 26) that they

Table 19

Library Member Attitudes and Technology Anxiety – Harmful to Beneficial

| | | Technology Anxiety | | | | |
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Harmful	0	2	0	0	0
	2	0	1	0	0	0
	3	0	0	1	0	0
	4	0	3	3	0	1
	5 Beneficial	14	22	6	7	1

Table 20

Library Member Attitudes and Technology Anxiety – Unfavorable to Favorable

| | | Technology Anxiety | | | | |
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Unfavorable	1	1	0	0	0
	2	0	1	0	0	0
	3	0	3	3	0	0
	4	0	3	1	1	1
	5 Favorable	13	14	6	2	0

found the use of SSTs to be pleasurable. Likewise, findings from the data showed that library members who disliked SST when visiting a library to check out materials, also strongly disagreed (n = 1) that SSTs were exciting to use. Library members who liked SST when visiting a library to check out materials, also agreed (n = 16) that SSTs were exciting to use. Library members who described SST as harmful when visiting a library to check out materials strongly disagreed (n = 1) as well as were neutral (n = 1) to feeling

that SSTs were exciting to use. Library members who described SST as beneficial when

visiting a library to check out materials, also agreed (n = 26) that SSTs were exciting to

use. Library members who were unfavorable to using SST when visiting a library to

check out materials were neutral (n = 1) as well as agreed (n = 1) that they found the use

of SSTs to be pleasant. Also, library members who were favorable to using SST when

visiting a library to check out materials agreed (n = 20) that they found the use of SSTs to

be pleasant. Lastly, results related to library members and their attitudes toward perceived

enjoyment, whether bad to good, dislike to like, harmful to beneficial, or unfavorable to

favorable by the number of members were in Tables 21, 22, 23, and 24.

Table 21

Library Member Attitudes and Perceived Enjoyment – Bad to Good

| | | Perceived Enjoyment | | | | |
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Bad	0	0	1	0	0
	2	0	1	0	0	0
	3	0	1	1	1	0
	4	0	1	1	3	0
	5 Good	1	0	7	26	6

When analyzing library member attitudes and perceived usefulness, findings from

the data showed that library members who described their feelings toward SST as bad

also were neutral (n = 1) about them being more efficient while visiting the library when

they use SSTs. Conversely, library members who described their feelings toward SST as

good, also strongly agreed (n = 15) as well as agreed (n = 15) that they were more

Table 22

Library Member Attitudes and Perceived Enjoyment – Dislike to Like

		Perceived Enjoyment				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Dislike	0	0	1	0	0
	2	0	1	0	0	0
	3	1	2	2	1	0
	4	0	0	1	4	0
	5 Like	0	0	6	25	6

Table 23

Library Member Attitudes and Perceived Enjoyment – Harmful to Beneficial

		Perceived Enjoyment				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Harmful	0	0	1	1	0
	2	0	1	0	0	0
	3	0	0	1	0	0
	4	0	2	3	2	0
	5 Beneficial	1	0	5	27	6

efficient while visiting the library when they used SSTs. Likewise, findings from the data

showed that library members who disliked SST when visiting a library to check out

materials, also disagreed (n = 1) that SSTs improved their check out performance.

Library members who liked SST when visiting a library to check out materials also

Table 24

Library Member Attitudes and Perceived Enjoyment – Unfavorable to Favorable

| | | Perceived Enjoyment | | | | |
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Unfavorable	0	0	1	1	0
	2	0	1	0	0	0
	3	0	2	2	2	0
	4	1	0	1	4	0
	5 Favorable	0	0	6	23	6

agreed (n = 18) that SSTs improved their check out performance. Library members who

described SST as harmful when visiting a library to check out materials were neutral (n =

1) as well as agreed (n = 1) that SSTs were useful when checking out library materials.

Library members who described SST as beneficial when visiting a library to check out

materials, also strongly agreed (n = 19) that SSTs were useful when checking out library

materials. Library members who were unfavorable to using SST when visiting a library to

check out materials strongly disagreed (n = 1) as well as disagreed (n = 1) that their

experience with borrowing library materials was enhanced when using SSTs. Also,

library members who were favorable to using SST when visiting a library to check out

materials, strongly agreed (n = 17) that their experience with borrowing library materials

was enhanced when using SSTs. Lastly, results related to library members and their

attitudes toward perceived usefulness, whether bad to good, dislike to like, harmful to

beneficial, or unfavorable to favorable by the number of members were in Tables 25, 26,

27, and 28.

Table 25

Library Member Attitudes and Perceived Usefulness – Bad to Good

| | | Extrinsic Factors | | | | |
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Bad	0	0	1	0	0
	2	0	1	0	0	0
	3	0	0	3	0	0
	4	0	1	0	2	2
	5 Good	0	2	8	15	15

Table 26

Library Member Attitudes and Perceived Usefulness – Dislike to Like

| | | Extrinsic Factors | | | | |
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Dislike	0	1	0	0	0
	2	0	1	0	0	0
	3	0	0	4	1	1
	4	0	0	3	2	0
	5 Like	1	0	6	18	12

When analyzing library member attitudes and perceived time convenience,

findings from the data showed that library members who described their feelings toward

SST as bad also were neutral ($n = 1$) about their wait time being reduced when using

SSTs. Conversely, library members who described their feelings toward SST as good,

also strongly agreed ($n = 22$) that their wait time was reduced when using SSTs.

Table 27

Library Member Attitudes and Perceived Usefulness – Harmful to Beneficial

| | | Extrinsic Factors | | | | |
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Harmful	0	0	1	1	0
	2	0	0	1	0	0
	3	0	0	0	0	1
	4	0	1	0	6	0
	5 Beneficial	0	0	2	18	19

Table 28

Library Member Attitudes and Perceived Usefulness – Unfavorable to Favorable

| | | Extrinsic Factors | | | | |
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Unfavorable	1	1	0	0	0
	2	0	1	0	0	0
	3	0	1	2	2	1
	4	0	1	1	2	2
	5 Favorable	0	2	2	14	17

Likewise, findings from the data showed that library members who disliked SST when visiting a library to check out materials, also strongly disagreed (n = 1) that when visiting the library, SSTs allowed them to quickly accomplish tasks. Library members who liked SST when visiting a library to check out materials, also strongly agreed (n = 23) that when visiting the library, SSTs allowed them to quickly accomplish tasks. Library members who described SST as harmful when visiting a library to check out materials

were neutral (n = 2) that SSTs made their check out task easier. Library members who described SST as beneficial when visiting a library to check out materials, also strongly agreed (n = 19) that SSTs made their check out task easier. Library members who were unfavorable to using SST when visiting a library to check out materials, were neutral (n = 2) that SSTs allowed them to check out materials faster. Also, library members who were favorable to using SST when visiting a library to check out materials, strongly agreed (n = 21) that SSTs allowed them to check out materials faster. Lastly, results related to library members and their attitudes toward perceived time convenience, whether bad to good, dislike to like, harmful to beneficial, or unfavorable to favorable by the number of members were in Tables 29, 30, 31, and 32.

Table 29

Library Member Attitudes and Perceived Time Convenience – Bad to Good

| | | Extrinsic Factors | | | | |
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Bad	0	0	1	0	0
	2	0	0	1	0	0
	3	0	0	2	1	0
	4	0	1	1	1	2
	5 Good	0	1	5	12	22

Relationship Between Library Member Attitudes and Behavioral Intentions

Research Question 3, which explored the relationship between the attitudes of library members and their intentions to use SSTs when visiting a library system, was emphasized in these data. Also, it explored the value of the use of technology and

Table 30

Library Member Attitudes and Perceived Time Convenience – Dislike to Like

| | | Extrinsic Factors | | | | |
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Dislike	0	0	1	0	0
	2	0	0	1	0	0
	3	0	1	4	1	0
	4	0	0	1	2	2
	5 Like	0	1	3	11	22

Table 31

Library Member Attitudes and Perceived Time Convenience – Harmful to Beneficial

| | | Extrinsic Factors | | | | |
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Harmful	0	0	2	0	0
	2	0	0	1	0	0
	3	0	0	1	0	0
	4	0	1	2	1	3
	5 Beneficial	0	1	4	13	21

how it impacted library member perception, more specifically, by identifying what

factors library members' valued when deciding to use SSTs to check out materials during

their visit. Data from this section answered the third research question. What is the

relationship between the attitudes of library members and their intentions to use SSTs

Table 32

Library Member Attitudes and Perceived Time Convenience – Unfavorable to Favorable

		Extrinsic Factors				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Library Member Attitudes	1 Unfavorable	0	0	2	0	0
	2	0	0	1	0	0
	3	0	1	4	0	1
	4	0	0	1	3	2
	5 Favorable	0	1	2	11	21

when visiting a library system? When analyzing the relationship between the attitudes of library members and their intentions to use SSTs when visiting a library system, findings from the data showed that 54% of library members strongly agreed that in the near future, they intended to check out library materials by using SSTs. Conversely, 2% of library members strongly disagreed that in the near future, they intended to check out library materials by using SSTs. Likewise, findings from the data showed that 56% strongly agreed with the likelihood that they would use SSTs to borrow library materials. However, 2% of library members strongly disagreed that it was likely that they would use SSTs to borrow library materials. Also, 50% of library members strongly agreed that in the near future, they expected to borrow library materials using SSTs, whereas, 4% disagreed that in the near future, they expected to borrow library materials using SSTs. These findings suggested that the intentions, the likelihood, and the expectations of over half of all library members to check out library materials using SSTs in the near future were agreeable. Lastly, results related to the relationship between attitudes of library members and their intentions to use SSTs when visiting a library system by percentage

were in Tables 33, 34, and 35.

Table 33

Behavioral Intentions of Library Member – Library Member Intentions to Check out Library Materials Using Self-Service Technology

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	2.0	2.0
Disagree	2	4.0	6.0
Neutral	4	8.0	14.0
Agree	16	32.0	46.0
Strongly Agree	27	54.0	100.0

Table 34

Behavioral Intentions of Library Member – Library Member Likeliness to Use Self-Service Technology to Check out Library Materials

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	2.0	2.0
Disagree	3	6.0	8.0
Neutral	5	10.0	18.0
Agree	13	26.0	44.0
Strongly Agree	28	56.0	100.0

Table 35

Behavioral Intentions of Library Member – Library Member Expectations to Check out
Library Materials Using Self-Service Technology

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	0	0.0	0.0
Disagree	2	4.0	4.0
Neutral	7	14.0	18.0
Agree	16	32.0	50.0
Strongly Agree	25	50.0	100.0

Effect of Familiarity on Library Member Attitudes and Motivation Factors

The effect of familiarity on library member attitudes and toward SSTs and
motivation factors when visiting a library system was emphasized in these data. For
example, this research question dissected library member perceptions, the value of
becoming familiar with SSTs, and how this familiarity balanced the relationship that
developed among library member attitudes and motivation factors within a library
environment. Data from this section answered the fourth research question. Does
familiarity have an effect on library member attitudes toward SSTs and motivation
factors when visiting a library system? When analyzing the effect of familiarity on library
member attitudes toward SSTs and motivation factors when visiting a library system,
findings from the data showed that 56% of library members strongly agreed that they
regularly used computers. Conversely, 2% of library members disagreed that they
regularly used computers. Likewise, findings from the data showed that 30% disagreed
that their experience was limited using self-services that were technology-based.
However, 10% of library members were neutral that their experience was limited using
self-services that were technology-based. Also, 42% of library members strongly agreed

that they frequently used technology-based services, whereas, 4% strongly disagreed that they frequently used technology-based services. The data illustrated that approximately 56% of library members strongly agreed that they were comfortable and familiar with self-service checkouts, compared to 4% who strongly disagreed, 4% who disagreed, and 4% who were neutral that they were comfortable and familiar with self-service checkouts. Similarly, 42% of library members agreed that SST and its benefits were familiar to them, whereas 6% of library members strongly disagreed that SST and its benefits were familiar to them. Concerning the effects of familiarity on library member attitudes and SSTs, these findings suggested that more than half of library members regularly used computers and were comfortable and familiar with self-service checkouts. However, only 30% of library members opposed that their experience was limited using self-services that were technology-based. These findings also suggested that over 40% of library members frequently used technology-based services and were familiar with the benefits offered by SST.

Self-service and the library member experience continue to be the leading focus of most libraries today. When analyzing the borrowing experience of library members using self-service technology when visiting a library system, findings from the data showed that 62% of library members were familiar with the SST offered at the library and 4% were not familiar with the SST offered at the library. The data illustrated that approximately 86% of library members had used SST offered at the library to check out materials and 14% had not used SST offered at the library to check out materials. Based on a monthly average, 18% of library members used SST two times per month, 16% of library members used SST zero, one, and four times per month, 12% of library members

used SST three and seven times per month, 6% of library members used SST five times per month, and 2% of library members used SST six and ten times per month when checking out library materials. Also, 88% of library members described their experience with SST as a positive experience and 12% described their experience with SST as a negative experience. Regarding the borrowing experience of library members using self-service technology when visiting a library system, these findings suggested that 62% of library members were familiar with the SST offered at the library, and over 85% of library members had used SST offered at the library to check out materials and described their experience with SST as a positive one. Lastly, results related to familiarity and the effect on library member attitudes toward SSTs and motivation factors, as well as their borrowing experience using SST when visiting a library system by percentage were in Tables 36, 37, 38, 39, 40, 41, 42, 43 and 44.

Table 36

Self-Service Technology and Familiarity – Regular Use of Computers by Library Members

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	5	10.0	10.0
Disagree	1	2.0	12.0
Neutral	5	10.0	22.0
Agree	11	22.0	44.0
Strongly Agree	28	56.0	100.0

Table 37

Self-Service Technology and Familiarity – Limited Experience of Library Members With Technology-Based Self-Services

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	13	26.0	26.0
Disagree	15	30.0	56.0
Neutral	5	10.0	66.0
Agree	11	22.0	88.0
Strongly Agree	6	12.0	100.0

Table 38

Self-Service Technology and Familiarity – Frequency of Use With Technology-Based Services by Library Members

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	4.0	4.0
Disagree	0	0.0	0.0
Neutral	10	20.0	24.0
Agree	17	34.0	58.0
Strongly Agree	21	42.0	100.0

Table 39

Self-Service Technology and Familiarity – Library Member Familiarity and Comfort With Self-Service Technology

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	2	4.0	4.0
Disagree	2	4.0	8.0
Neutral	2	4.0	12.0
Agree	16	32.0	44.0
Strongly Agree	28	56.0	100.0

Table 40

Self-Service Technology and Familiarity – Library Member Familiarity of Benefits From Self-Service Technology

Library Member Response	Frequency	Percent	Cumulative Percent
Strongly Disagree	3	6.0	6.0
Disagree	0	0.0	0.0
Neutral	8	16.0	22.0
Agree	21	42.0	64.0
Strongly Agree	18	36.0	100.0

Table 41

Self-Service Technology and Borrowing Experience – Library Member Familiarity With Self-Service Technology Offered at the Library

Library Member Response	Frequency	Percent	Cumulative Percent
1 Not Familiar	2	4.0	4.0
2	1	2.0	6.0
3	4	8.0	14.0
4	12	24.0	38.0
5 Extremely Familiar	31	62.0	100.0

Table 42

Self-Service Technology and Borrowing Experience – Library Member Use of Self-Service Technology to Check out Library Materials

Library Member Response	Frequency	Percent	Cumulative Percent
No	7	14.0	14.0
Yes	43	86.0	100.0

Table 43

Self-Service Technology and Borrowing Experience – Library Member Monthly Use of

Self-Service Technology to Check out Library Materials

Library Member Response	Frequency	Percent	Cumulative Percent
0	8	16.0	16.0
1	8	16.0	32.0
2	9	18.0	50.0
3	6	12.0	62.0
4	8	16.0	78.0
5	3	6.0	84.0
6	1	2.0	86.0
7	6	12.0	98.0
10	1	2.0	100.0

Table 44

Self-Service Technology and Borrowing Experience – Library Member Overall

Experience With Self-Service Technology

Library Member Response	Frequency	Percent	Cumulative Percent
Negative Experience	6	12.0	12.0
Positive Experience	44	88.0	100.0

Chapter 5: Discussion

Overview of Applied Dissertation

This chapter presented a summary of the study, along with the conclusions, implications of the study, and recommendations for further study. This chapter was divided into the following sections: overview of applied dissertation, discussion of results, implications of findings, limitations, and conclusions and recommendations for future research. Information gathered was used to clarify the significance of intrinsic and extrinsic motivators and library member adoption of SSTs at a southeastern county library system.

Based on the research conducted by Davis et al. (1989), this study applied the Technology Acceptance Model (TAM), which was developed as an information systems theory. This model exemplified the consent of consumers to adopt and utilize exclusive technology. As the guiding purpose of TAM, the model sought to improve the understanding of the outcome of external factors on consumers' attitudes, intentions, and internal beliefs (Davis et al., 1989). Widely embraced by many researchers, TAM was used as a predictor of technology acceptance by consumers and for the identification of possible design issues of technology. As an adaption of the Theory of Reasoned Action (TRA) model, TAM embraced the fundamental order of attitude, intention, behavior and beliefs, originally presented by social psychologists in TRA (Fishbein & Ajzen, 1975). Davis et al. (1989) suggested that the decisions of consumers were influenced by multiple factors regarding the timing and adoption of new technology.

The purpose of this study was to investigate and examine the influence of motivation factors and their relationships with adult library members when using self-

service technology at a southeastern county library system. More specifically, this study offered a valuable observation into how intrinsic and extrinsic motivation factors influenced the attitudes of library members when using SST at a library system. Also, the study offered insight into how the association between intrinsic and extrinsic factors and the attitude of library members were balanced by library member familiarity toward SSTs.

Although earlier studies revealed key motivation factors having an impact on the usage of SSTs in many service environments, the relationship between SST usage and motivation factors in libraries was not as apparent in recent studies. To analyze whether motivation factors had any effect on the attitudes of library members toward using SSTs, the following objectives supported the purpose of the study: (a) explore motivation factors, whether intrinsic or extrinsic, pertinent to utilizing SSTs, (b) examine the impact of motivation factors, whether intrinsic or extrinsic, on the attitudes of library members using SSTs at a library, (c) observe the relationship between library members' intention and attitude to use SSTs when checking out library materials, and (d) evaluate the relationship between motivation factors, whether intrinsic or extrinsic and the effects of familiarity and library members' attitudes toward using SSTs. The results of the four primary objectives were discussed below.

Objectives 1 and 2. Exploring motivation factors, whether intrinsic or extrinsic, that were pertinent to using SSTs was the aim of objective one. The second objective was to examine the impact of motivation factors, whether intrinsic or extrinsic, on library members' attitudes toward using SSTs for self-service checkout. The results of the study found a positive relationship between perceived enjoyment and a library member's

attitude toward the utilization of SSTs. Additionally, the results of the study found a negative relationship between technology anxiety and a library member's attitude toward the utilization of SSTs. The results confirmed that a relationship was present between intrinsic motivation factors and the attitudes of library members toward using SSTs.

According to the results collected from the data, the relationship between extrinsic motivation factors and the attitudes of library members toward using SSTs was positive. The relationship was also existent, involving perceived usefulness and library member attitudes toward the utilization of SSTs. Also, a positive relationship was found between perceived time convenience and the attitude of library members toward SSTs. Consistent with the results, perceived usefulness was interrelated with perceived time convenience, and might be measured as one variable. Therefore, a direct impact on extrinsic motivation factors and its relationship with library member attitudes toward the utilization of SSTs might be attributed to the correlation of factors.

Objective 3. Observing the relationship between library members' intention and attitude to use SSTs when checking out library materials was the aim of objective three. Related to library members' behavioral intentions towards using SSTs, a positive relationship was found between the attitudes and intentions of library members toward using SSTs in a library environment. The results confirmed the relationship between library members' attitudes and their behavioral intentions to use SSTs.

Objective 4. Evaluating the relationship between intrinsic and extrinsic motivation factors and the effects of familiarity and library members' attitudes toward using SSTs was the aim of objective four. The results of the study found a positive relationship between perceived enjoyment, a library member's attitude, and familiarity as

a moderating effect with the utilization of SSTs. However, there was a negative

relationship with technology anxiety, and library member attitudes toward the utilization

of SSTs and the moderating effect of familiarity with using SSTs were negative. This was

indicated by the influence of perceived enjoyment and library member attitudes toward

the utilization of SSTs when comparing higher levels of familiarity to lower levels of

familiarity toward the usage of technology. However, considering the relationship

between technology anxiety and the attitudes of library members regarding the use of

SSTs indicated that technology anxiety and its influence on library member attitudes

toward the utilization of SSTs would be less with higher familiarity levels in comparison

to lower familiarity levels and technology use. The results of the study found that a

negative relationship was present with extrinsic motivation factors, library member

attitudes, and familiarity with the use of SSTs. The results confirmed the relationships

between motivation factors and library member attitudes toward SSTs and the

moderating effects of familiarity on these relationships.

Discussion of Results

Four research questions guided this study:

1. What motivation factors are important in using SSTs at a library system?

2. What motivation factors influence the attitudes of library members who use

SSTs when visiting a library system?

3. What is the relationship between the attitudes of library members and their

intentions to use SSTs when visiting a library system?

4. Does familiarity have an effect on library member attitudes toward SSTs and

motivation factors when visiting a library system?

Research Questions 1 and 2. Research Question 1 addressed the importance of motivation factors and its relationship with library member attitudes toward using SSTs at a library system. According to the descriptive analysis, a positive relationship existed between perceived enjoyment and a library member's attitude toward using SSTs. For example, respondents revealed that they had more positive attitudes toward using SSTs in a library environment when they had a greater level of perceived enjoyment. Based on the survey questions asked, respondents implied that they often used self-service systems because it was fun and enjoyable. Such findings were consistent with a study by ven der Heijden (2004), which revealed that technology innovations intrigued consumers as a source of entertainment.

Like Meuter et al. (2003), a study by Oyedele and Simpson (2007) concluded that consumers' decisions to use technology were negatively affected by technology anxiety. Likewise, they also discovered that consumers were less inclined to use SSTs when their levels of technology anxiety were high. The findings also confirmed that the attitudes of library members toward SSTs were negatively influenced by technology anxiety. For example, respondents with less technology anxiety yielded more positive attitudes when compared to those with greater technology anxiety toward using SSTs. These findings suggested that to increase positive attitudes of library members toward SSTs, the importance of satisfying the need for enjoyment was necessary. This might be done through an appealing layout, visual design, or attractive sound. Therefore, through the adoption of SSTs by library systems, the consideration of perception of enjoyment for library members was necessary, and this might be attributed to the satisfaction and intention of library members to check out library materials using SSTs.

However, a library member's decision to use SSTs would be negatively affected by high levels of technology anxiety. Therefore, the design of the SST was essential to the level of ease with the features available to ensure comfort with an SST for consumers. This should be a primary consideration for library systems to certify easy-to-use features to assist with the level of comfort for library members. The findings of the study also suggested that technology has become increasingly prevalent with the younger generation of library members. However, this might be associated with the sample selection, considering that most respondents were between the ages of 35 to 44 (n = 14, 28.0%) and 25 to 34 (n = 13, 26%), many of which disclosed that they were comfortable with technology and the operation of computers.

Research Question 1 also addressed extrinsic motivation factors and the relationship shared with the attitudes of library members toward using SSTs. According to a study by Davis et al. (1989), as predictors of behavioral intention, perceived usefulness and perceived ease of use were identified by TAM when using a system. The findings of this study found perceived usefulness had an immediate impact on the attitudes of library members toward using SSTs. Whereas a significant relationship was present with both intrinsic motivation factors with library members' attitudes toward using SSTs, a significant relationship was also determined with perceived usefulness. For example, respondents specified that their decision to use SSTs was based on their perceptions of usefulness. This finding was inconsistent with research conducted by Dabholkar and Bagozzi (2002), which suggested that perceived usefulness has no relevance to technology-based self-service, considering that consumers had no ownership over the technology, and therefore, was unable to determine its usefulness. However, the

findings might be attributed to the sample of respondents, considering the majority of respondents had at least one experience with using SSTs and might distinguish the usefulness of SSTs despite not owning the technology. Studies by Curran et al. (2003), Featherman and Pavlou (2003), and Parasuraman, Zeithaml, and Makhorta (2005) showed consistency with this finding and suggested that perceived usefulness was a valuable component when predicting the attitudes of consumers using SSTs. Additionally, similar studies by Hausman and Siekpe (2009), Parasuraman et al. (2005), and Weijters et al. (2007) supported the findings of the study that consumers used technology because of its usefulness.

According to the descriptive analysis, perceived time convenience was found to be beneficial when visiting a library to check out materials and accomplish tasks quickly. However, perceived time convenience was also found to be unfavorable to the attitudes of respondents toward using SSTs. To address the survey questions asked regarding the experience of library members with SSTs, respondents indicated that using SSTs took more time if there was a problem. For example, if another member was not aware of how to use the self-service system or if a possible system error was to persist. This would imply that to increase the attitudes of library members toward using SSTs, more importantly, the usefulness of technology would precede time convenience, despite most library members stating that when they visited a library, they used SSTs for efficiency, to accomplish tasks quickly, and to reduce wait time.

Research Question 2 addressed motivation factors that influenced the attitudes of library members who use SSTs when visiting a library system. The findings of this study revealed that SSTs were perceived to be useful by library members. In turn, the attraction

to the SSTs also facilitated more positive attitudes toward using SSTs. Findings of the study suggested that to increase positive attitudes of library members toward SSTs library systems should highlight the usefulness of the system. Furthermore, respondents revealed that they use SSTs as a way to reduce time when fewer members were occupying the self-service stations. Therefore, while the significance of the relationship between library member attitudes and perceived time convenience toward using SSTs was not as meaningful, time convenience was very much important to respondents and their attitudes toward using SSTs. These findings were based on the responses to the survey questions that focused on why and how library members use SSTs. Library systems choosing to adopt SSTs should emphasize how the system reduced time when visiting a library. With the adoption of SSTs, library systems would provide faster and more efficient service, which might increase the number of library visits each year, increase the number of library cardholders, as well as increase the percentage of library materials circulated via self-checkout.

Moreover, based on the descriptive analysis, a high correlation between perceived usefulness and perceived time convenience was revealed, which indicated that both variables might be deemed as one variable. Since the construct time convenience might measure as usefulness, respondents could consider perceived time convenience and perceived usefulness to be the same. Therefore, this suggests that as a single variable, a different relationship might exist between extrinsic factors and library member attitudes toward SSTs. It would seem that respondents might associate perceived time convenience and perceived usefulness as one variable.

Research Question 3. Research Question 3 addressed the relationship between

the attitudes of library members and the intentions of members toward using SSTs when visiting a library system. According to descriptive analysis, the relationship between the attitudes and intentions of library members toward and use of SSTs was strongly supported by the data. This result was similar to previous research, which suggested that higher intentions to use a system were attributed to having a positive attitude toward the utilization of SSTs (Bhattacherjee & Premkumar, 2004; Dabholkar & Bagozzi, 2002; Seock & Norton, 2007). While the attitudes of respondents toward the use of SSTs had a positive effect on library member intentions to use SSTs, this finding signified the liability of library members with positive attitudes toward SSTs to more favorably using SSTs when visiting a library. Therefore, if a library chooses to adopt SSTs, it would be advisable to increase the satisfaction of library members when using SSTs by emphasizing the benefits of SSTs, such as its usefulness and time convenience. In doing so, this would enhance the attitudes of library members as a positive one, which might lead to an increase in the intention of library members to use SSTs when afforded the opportunity.

Research Question 4. Research Question 4 addressed the question of whether or not familiarity affected library member attitudes toward SSTs and motivation factors when visiting a library system. According to descriptive analysis, it was indicated by respondents that they experience less technology anxiety if they were familiar with SSTs and knew how to use the technology, which would bring about a more progressive attitude toward the utilization of SSTs. Consistent with this finding, a study by Kinard, Capella, and Kinard (2009), indicated that consumers who were familiar with a system often used more technology because they were cognizant of the system features, which

also reduced their technology anxiety. Findings on the influence of consumer use with self-service technology experiences by Meuter et al. (2003), as well as findings on the intentions of technology use by Oyedele and Simpson (2007), supported the findings of this study. Similarly, their findings and the findings of the study designated that if a library member was unfamiliar with an SST, they would be hesitant to use the SST and opt-out of using the self-checkout station. This library member would likely use the customary mode of member service, which would be a library member opting to check out library materials at the circulation checkout counter with a library member specialist. Thus, if a library member was not as familiar with technology and its usage, the likelihood of apprehension toward using the technology might be heightened and could negatively affect their attitudes when considering the use of SSTs compared to other library members who were more familiar with SSTs. Therefore, to increase library members' level of comfort with using the self-checkout station, library systems should encourage members to become more familiar with SSTs.

The findings demonstrated a less critical response to perceptions related to the influence of perceived enjoyment when surveying familiarity and its moderating effect on the utilization of SSTs and the attitudes of library members toward using SSTs. According to descriptive analysis, this finding indicated that the influence of perceived enjoyment was not directly impacted by the familiarity with using SSTs on the attitudes of library members toward using SSTs. These findings suggested that the more familiar library members were with using SSTs, which attributed to a decrease in technology anxiety; it was more probable for library members to have had attitudes that were more positively driven toward the utilization of SSTs equated to other library members that

might be less familiar with using SSTs. To address technology anxiety experienced by library members, library systems should provide assistance and direct access to library member specialists to help with decreasing their level of anxiety with technology, which would lead to more positive attitudes of library members toward using SSTs.

According to descriptive analysis, existent in the relationships between perceived usefulness and the attitudes of library members toward SSTs, familiarity, and its moderating effect presented a negative result toward using SSTs. That was, the more familiar library members became with SSTs, they assumed SSTs to be less useful. As previously mentioned, about the responses given by library members to the survey questions on the past experiences with SSTs of respondents, they believed that there was an increase in time when an SST had a problem. For example, a system error or if another member occupying the self-service station was inexperienced with operating the system. Therefore, for library systems that choose to adopt SSTs, it was essential that libraries informed their members on the usefulness of SSTs, especially during busy times at the library. Similar to this finding, a study by Kober, Lee, and Ng (2010), indicated that the more familiar consumers were with technology usage, SSTs were then viewed as being less useful. Contrarily, the attitudes of library members might negatively form toward the utilization of SSTs when compared to the usage of technology by less familiar consumers. Considering that this finding was not as significant in this study, primarily because the data collected was from library members with an increased level of familiarity with using SSTs, the recommendation for library systems would be to emphasize the usefulness of SSTs and its importance to library members with decreased levels of familiarity with using SSTs.

A negative moderating effect of familiarity was also present in the relationships between perceived time convenience and the attitudes of library members toward SSTs. Contrarily, this finding was not kept by studies conducted by Oyedele and Simpson (2007) or Parasuraman et al. (2005), proposing that consumers who were acquainted with the advantages of SSTs associated with time convenience, that they would be more willing to use SSTs if an opportunity was given. As previously mentioned, the more familiar a library member becomes with using SSTs, they assumed that it would take an exponential amount of time if a problem were to persist with an SST. Following the consideration of the moderating effect of familiarity concerning the use of SSTs, perceived usefulness and its influence on the attitudes of library members displayed a positive effect; whereas, perceived time convenience did not hold much significance. Dependent upon whether a library member understood how to operate SST to check out library materials or not, or if possible, system errors were to take place, resulted in a possible delay and took more time to use SSTs for self-checkout. That was, library members might recognize that it could take additional time to become familiar with SSTs, and thus, not necessarily save time. However, to ensure that time was not wasted with SST use, library systems should increase the availability of library member specialists to assist library members when necessary.

Implications of Findings

This study offered an understanding of four concerns surrounding theoretical relevance to the Technology Acceptance Model and the potential adoption of SSTs in a library environment. First, it investigated the experiences that steered the intentions of library members to use SSTs in a library environment. To assess the relationships of

attitude toward using SSTs, technology anxiety and perceived enjoyment symbolized intrinsic motivation factors, while perceived usefulness and perceived time convenience symbolized extrinsic motivation factors.

Second, the research examined motivation factors and the effects on the attitudes of library members toward using SSTs when checking out library materials. According to the findings, technology anxiety and perceived enjoyment were important components influencing the attitude of library members toward using SSTs. The majority of respondents indicated that the reason as to why they used SSTs was that they were fun to use. The study relied on a hypothetical scenario to analyze whether intrinsic motivation factors had any effect on the attitudes of library members toward using SSTs, seeing that they were not available in all libraries and/or branch locations within a system. Nonetheless, a significant relationship was found between intrinsic motivation factors and the attitude of library members when using SSTs. This result suggested that these components were to be considered by library systems when and if they chose to adopt SSTs. The most significant extrinsic motivation factor influencing the attitudes of library members toward using SSTs was perceived usefulness, which indicated that respondents utilized SST because of its usefulness. Therefore, if library systems choose to adopt SSTs, they would need to exercise training for library employees to accept SSTs to attain appropriate levels of knowledge relating to these technologies, and the encouragement of library members and their intention to use them. To deliver full service and exceptional satisfaction to library members, library managers and supervisors also need the training to construct and incorporate the exact assembly of technologies that would serve as most useful.

Third, this study examined the relationship between the attitude of library members toward the utilization of SSTs and intentions of members toward SSTs in a library environment. According to the findings, nearly all of the moderating effects that were analyzed were supported by the results found, whether positive or negative. As an enhancement of TRA and TAM, the findings supported the model as a theoretical implication grounded in research in addition to familiarity and the moderating effect with SST use on the relationship between library member attitudes and motivation factors toward the utilization of SSTs. Attributed to the establishment of relationships between library member attitudes toward SSTs and motivation factors, the model developed was a solid contribution to the earliest model. The conceptual findings of previous research on TAM now incorporated the addition of familiarity as a moderating effect.

Fourth, with the advancements of self-service technology, this study adds to the growing wealth of information on the behaviors of library members with SSTs and specifically satiated the existing gap concerning SST use in a library environment. Findings could support library systems interested in the enhancement of service offerings by introducing additional means for library members to check out library materials when visiting a library. By adopting SSTs, library systems would provide faster and more efficient service to library members.

Limitations

Limitations existed within this study that pointed to opportunities for further research. Research documentation on intrinsic and extrinsic motivation factors and the relationship with SST in a library system was limited (Morris & Venkatesh, 2000; Venkatesh et al., 2000). Besides, not much had been revealed considering the relationship

between a library member's attitude and motivational factors, and familiarity with SSTs and use in a library system. Consequently, a survey instrument was created, and the testing of the instrument for validity had not been arduous enough to eliminate errors. Likewise, the reliability of the study could be questioned.

First, seeing that other library systems might or might not offer self-service technology, a scenario was provided and guided the study. The option of testing SST perceptions in a library environment for future research might be explored once library systems offer SSTs more extensively. Conversely, since the majority of respondents expressed that they had at least one experience with SSTs offered in a library setting, such as the self-service checkout stations, the study was able to examine the prospective adoption of SSTs. Second, the research conducted was limited because the study focused on one single type of SST, a self-service system manufactured by Lyngsoe Library Systems. While a general definition of self-service technology and a description of varying types of SSTs was provided in the study, the self-checkout station used primarily for the automated handling process was the primary system respondents considered when completing the survey.

Finally, data were collected in-person from registered library members, 18 years of age or older from four of 17 branch locations at one southeastern county library system, and most respondents were females (n = 33, 66%) and Caucasian/White. Although library members represented a similar population practical for theory development, knowledge of technical expertise, and a representation of community members of every gender, age, education, income level, ethnicity, or physical ability, they were not a true representation of all populations. To compare the perceptual or

behavioral outcomes of library members, multiple group analysis might be considered based on different demographics like age, education, gender, and income. Similarly, since the research used library members from different branch locations as its sample, the demographics of respondents were relatively the same. Therefore, it was suggested that future research apply the model across differing populations. Additionally, with the advancements of technology, library members increasingly used various types of SSTs to include smartphone applications. Therefore, future research should consider such types of SSTs as well as other technology-based systems. This would allow for further examination of whether or not library member attitudes toward using SSTs were moderated by familiarity and how this might affect the behavioral intentions of library members.

Conclusions and Recommendations for Future Research

The purpose of this study was to investigate and examine the potential adoption of SSTs in a library environment. The importance of motivation factors for the adoption of SSTs in a library environment was explored, as well as the effect of familiarity in influencing the possibility of its adoption. The focus of the study was on SST in the form of a self-checkout station. A self-administered questionnaire by library members at a southeastern county library system was used to collect data, with 50 usable questionnaires collected. Respondents were predominantly female (n = 33, 66.0%), with ages 35 to 44 being the majority (n = 14, 28.0%). The majority of participants were Caucasian/White (n = 17, 34.0%) and college graduates (n = 19, 38.0%). Measures implemented in the study were grounded on the existing literature and assessed using a five-point Likert-type scale and a five-point semantic differential scale. Because self-

service technology was not offered at many libraries, participants of the study were provided with a definition of SST and a hypothetical scenario when visiting a library to check out materials before completing the survey.

Based on the descriptive analysis, as a valuable element influencing the attitudes of library members toward SSTs, perceived enjoyment was recognized by most respondents when answering fun as to why they use SSTs. Therefore, library systems choosing to adopt SSTs should direct their focus to offer library members a SST that satisfied their requisite for entertainment by including features that were appealing and fun. This might include a display that attracts members, one that was attention-grabbing or had enticing sounds. Like perceived enjoyment, technology anxiety was also a valuable element affecting the attitudes of library members when using SSTs. As library members became more familiar with using SSTs, technology anxiety would reduce, which prompted a progressive attitude toward the use of SSTs. In an attempt to reduce technology anxiety of library members, library systems adopting SSTs should offer detailed, but clear information to library members who were not familiar with using them. By implementing this, library systems might increase the comfort level of library members with SSTs, which could lead to an escalation in the use of SSTs, especially during busy times.

In regards to extrinsic factors, perceived usefulness was a valuable element affecting the attitudes of library members when using SSTs. Therefore, libraries choosing to adopt SSTs might want to promote SSTs usefulness when attempting to complete a transaction as a way of attracting the attention of library members. Followed by technology anxiety, both perceived enjoyment and perceived usefulness were noted as the

most significant variables associated with the attitudes of library members when using SSTs, amongst all intrinsic and extrinsic motivation factors.

The findings of the study provided a clear understanding of the attitudes of library members and their intentions when using SSTs, primarily within a library. Results of the study implied that library members who identified SSTs as enjoyable were more apt to exhibit a favorable attitude when using SSTs in a library. Contrarily, library members holding a common fear of technology and its use were less likely to display a favorable attitude when using SSTs in a library. Furthermore, the results proposed that library members, who perceived SSTs as enjoyable and would allow for a more efficient process when using SSTs, were likely to use SSTs when checking out library materials. Therefore, library systems should emphasize the usefulness of SSTs, especially on the time saved and the convenience provided when library associates might be occupied or away from the desk, such as adding an easy self-service checkout sign.

The findings of the study indicated an important moderating effect of familiarity on the relationship between technology anxiety and the attitudes of library members when using SSTs. For that reason, technology anxiety and the influence on the attitudes of library members when using SSTs would be less in higher levels of familiarity when compared to lower levels of familiarity toward the use of technology. These findings also suggested a trivial relationship between the attitudes of library members and their behavioral intentions when using SSTs to check out library materials in a library. If library systems shared and emphasized the accessible features offered by SSTs, then library members might distinguish their level of technology anxiety when using SSTs were unreasonably high.

Based on the findings of the study, library systems could foster innovative marketing strategies geared toward increasing satisfaction levels of library members using SSTs. Moreover, library systems could further develop their services by delivering added means for library members to check out materials in the library, especially during extremely hectic periods, for instance, the afternoon or weekends. Library systems might retain library members by offering prompt, more efficient services when adopting SSTs, which would sequentially, steer towards increased levels of satisfaction. Therefore, library systems could expand on self-service usage as well as library members' usability of other library services. The study's results proposed a high-level of probability that library members would potentially adopt SSTs in a library.

Given that extrinsic motivation factors, perceived usefulness and perceived time convenience shared a high correlation, both variables might be considered as one variable, and thus, might impress upon the relationship between library members attitudes and extrinsic motivation factors when using SSTs. Therefore, if perceived usefulness and perceived time convenience were regarded as one variable, the relationship between library member's attitudes and extrinsic motivation factors when using SSTs might change. When conducting future research, studies might consider and deem both variables as one variable. Moreover, the data collected for this study was predominantly from females (n = 33, 66%). Therefore, by including additional male respondents, the relationships among intrinsic and extrinsic motivation factors and the attitudes of such library members when using SSTs might distinctly be different.

Furthermore, varying services offered by libraries enticed diverse types of library members, perhaps distinctive age groups, and levels of income, genders, and differing

levels of technology anxiety. Therefore, variables that were essential to a library's members needed to be cogitated. For example, if a library system attracted mostly younger library members (e.g., ages 35 to 44 being the majority, n = 14, 28.0%; followed by ages 25 to 34, n = 13, 26%), then primary focus might be shifted to perceived enjoyment and SST use, considering the age group being that of a younger generation and the probability that they would more likely gravitate towards using technology, especially if they found it to be enjoyable. Still, if the library system's members were from an older age group, then there might be a higher level of technology anxiety for library members. Therefore, the library system should direct their focus on reducing technology anxiety experienced by library members when using SSTs, and provide detailed, but clear information to library members on using SSTs by demonstrating how easy and beneficial SSTs were to use.

The presence of library member specialists in a library was another significant component in a library member's attitude toward using SSTs. For example, while library systems had been able to maintain full-time equivalents over the years (e.g., 420 in the fiscal year 2014, 422 in the fiscal year 2015, 423 in the fiscal year 2016, and 424 in the fiscal year 2017), many library systems already offered other self-services for library member use (PBC, 2018, p. 98). Library satisfaction might be further increased by delivering prompt service, which might lead to higher circulation per registered library member.

Therefore, based on the results provided by this study, new marketing strategies might be introduced to library members when considering the adoption of SSTs in a library system. This study provided key factors that library systems should consider when

adopting SSTs. For example, this study contributed to the growing knowledge base about library members' behavioral intentions relating to SSTs. It satiated a gap in the literature concerning the potential adoption for SST in the library environment. Also, this study could be of great value to the other libraries in making sound decisions regarding the acceptance or rejection of SSTs, as well as advising the library director, the assistant director, and division heads within the southeastern county library system under study. Lastly, this study provided a foundation with evidence to support further research on this subject. Based on the results provided, three recommendations for future research were suggested:

1. Repeat this study, including all branch locations of the southeastern county library system under study, and determine if the results of this study were validated.

2. Repeat this study at the surrounding county libraries throughout the state and determine if the results of this study were validated.

3. Conduct a study based on library member demographics correlating to self-service technology usage and compare results with this study.

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Appendix A

Participation Letter

Participation Letter

Title of Study: Self-Service Technology in a Library System: An Examination of Potential Library Member Adoption of Self-Service Checkout at a Southeastern County Library System

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Site(s) Information
Palm Beach County Library System   Palm Beach County Library System
Main Library (Central Area)   Belle Glade Branch (Glades Area)
3650 Summit Boulevard   725 NW 4th Street
West Palm Beach, FL 33406   Belle Glade, FL 33430

Palm Beach County Library System   Palm Beach County Library System
Royal Palm Beach Branch (North Area)   Wellington Branch (South Area)
500 Civic Center Way   1951 Royal Fern Drive
Royal Palm Beach, FL 33411   Wellington, FL 33414

Description of Study: Keisha G. Phillips-Daley is a doctoral student at Nova Southeastern University engaged in research for the purpose of satisfying a requirement for a Doctor of Education degree. The purpose of this study is to investigate and examine the significance of motivation factors and their relationships with adult library members, 18 years of age and older, when using a self-service technology (SST) at a southeastern county library system.

If you agree to participate, you will be asked to complete the attached survey. The survey will take approximately 10-15 minutes to complete. To complete the survey, you will be asked to select a response pertaining to your perception of SST and potential to use them when visiting the library. In addition, your participation will involve reading a brief hypothetical scenario that relates to your check out experience at the library system. Non-personal demographic questions will conclude the survey, and will be used for categorization purposes only. The data from this survey will be used for researcher purposes and may be used to advise the library director, the assistant director, and

division heads within the southeastern county library system.

Risks/Benefits to the Participant: There may be minimal risk involved in participating in this study. There are no direct benefits for agreeing to be in this study. Please understand that although you may not benefit directly from participation in this study, you have the opportunity to enhance knowledge necessary to evaluate self-services offered at a southeastern county library system. If you have any concerns about the risks/benefits of participating in this study, you can contact the investigators and/or the university's human research oversight board (the Institutional Review Board or IRB) at the numbers listed above.

Cost and Payments to the Participant: There is no cost for participation in this study. Participation is voluntary and no payment will be provided.

Confidentiality: Information obtained from this study is strictly confidential unless disclosure is required by law. All data will be secured in a locked filing cabinet. Your name will not be used in the reporting of information in publications or conference presentations.

Participant's Right to Withdraw from the Study: You have the right to refuse to participate in this study and the right to withdraw from the study at any time without penalty.

I have read this letter and I fully understand the contents of this document and voluntarily consent to participate. All of my questions concerning this research have been answered. If I have any questions in the future about this study they will be answered by the investigator listed above or his/her staff.

I understand that the completion of this survey implies my consent to participate in this study, and that I am an adult library member 18 years of age or older.

Appendix B

Self-Service Technology Survey

Self-Service Technology Survey

Thank you for your willingness to complete this survey. Your participation will involve reading a brief hypothetical scenario in the survey about self-service, with an opportunity to use self-service technology (SST) to check out your library materials. You will then be asked to answer questions or respond to statements that pertain to your perception of SSTs, and the potential to use them when visiting the library. Demographic information asked will only be used for categorization purposes.

Section A – Self-Service Technology and Familiarity
For the statements below, please indicate your agreement or disagreement about using SSTs.

1. I regularly use computers.

   Strongly   Disagree   Neutral   Agree   Strongly
   Disagree   Agree

2. My experience is limited using self-services that are technology-based.

   Strongly   Disagree   Neutral   Agree   Strongly
   Disagree   Agree

3. I frequently use technology-based services.

   Strongly   Disagree   Neutral   Agree   Strongly
   Disagree   Agree

4. I am comfortable and familiar with self-service checkouts.

   Strongly   Disagree   Neutral   Agree   Strongly
   Disagree   Agree

5. SST and its benefits are familiar to me.

   Strongly   Disagree   Neutral   Agree   Strongly
   Disagree   Agree

Section B – Self-Service Technology and Technology Anxiety
For the statements below, please indicate your agreement or disagreement about using SSTs.

6. Learning technology-related skills will not be difficult.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

7. When it comes to technological matters, I have some difficulty understanding some matters.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

8. I sometimes feel apprehensive when using technology.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

9. When considering the use of technology, I am concerned with damaging it in some way.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

10. To interpret technological output, I am confident in my abilities.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

11. Terminology related to technology sounds confusing and unclear to me.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

12. I often avoid technology because I am not familiar with it.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

13. Keeping up with technological advances is simple.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

14. When using technology, I often hesitate because I fear making mistakes that I may not be able to correct.

| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

15. When I think of technology-based systems, they intimidate me.

| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

For the following sections (C, D, E, F, and G), first read the scenario and then respond to statements or questions to follow.

Imagine you are visiting a library to check out materials. When you are ready to check out your materials, you notice that you have two options:

Option 1: Check out your materials at the circulation checkout counter with a Library Member Specialist, or

Option 2: Use a self-checkout station that is located near the circulation checkout counter. The self-service station has a user-friendly tutorial available to help expedite the check-out process.

You are contemplating the use of the self-checkout station, and have been instructed that radio frequency identification system (RFID) tags will be removed when using the self-service station. If there was any difficulty in using the station, a Library Member Specialist is available at your request.

Section C – Perceived Enjoyment
Based on the scenario given, please indicate your agreement or disagreement about using SSTs.

16. I find the use of SSTs to be fun.

| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

17. I find the use of SSTs to be pleasant.

| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

18. I find the use of SSTs to be pleasurable.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

19. SSTs are exciting to use.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

20. I find the use of SSTs to be enjoyable.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

Section D – Extrinsic Factors
Based on the scenario given, please indicate your agreement or disagreement about using SSTs.

21. SSTs improve my check out performance.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

22. SSTs are useful when checking out library materials.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

23. My experience with borrowing library materials is enhanced when using SSTs.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

24. When visiting the library, SSTs would allow me to quickly accomplish tasks.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

25. SSTs make my check out task easier.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

26. SSTs allow me to check out materials faster.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

27. I am more efficient while visiting the library when I use SSTs.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

28. My wait time is reduced when using SSTs.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

Section E – Self-Service Technology and Library Member Attitudes
Based on the scenario given, please respond to the following statement about using SST.

29. As it relates to SST, I would describe my feelings as:

Bad ___ : ___ : ___ : ___ : ___ Good

Dislike ___ : ___ : ___ : ___ : ___ Like

Harmful ___ : ___ : ___ : ___ : ___ Beneficial

Unfavorable ___ : ___ : ___ : ___ : ___ Favorable

Section F – Behavioral Intentions of Library Members
Based on the scenario given, please indicate your agreement or disagreement about using SSTs.

30. In the near future, I intend to borrow library materials by using SSTs.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

31. It is likely that I will use SSTs to borrow library materials.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

32. In the near future, I expect to borrow library materials using SSTs.

Strongly   Disagree   Neutral   Agree   Strongly
Disagree   Agree

Section G – Borrowing Experience Using Self-Service Technology
Based on the scenario given, please indicate your agreement or disagreement about using SSTs.

33. Are you familiar with the SST offered at the library?

Not Familiar ___ : ___ : ___ : ___ : ___ Extremely Familiar

34. Have you ever used SSTs offered at your library to borrow materials?

____ No   (If you answered no, please explain why: _____
                                       _____)

____ Yes   (If you answered yes, please explain why: _____
                                       _____)

35. How would you describe your experience with SSTs?

I had a negative
____ experience   (Please detail your negative experiences:_____
                                       _____)

I had a positive
____ experience   (Please detail your positive experiences: _____
                                       _____)

36. On average, how many times in a month do you use SSTs when checking out your library materials?
_____

Section H – Demographic Information
Please answer the following demographic questions:

37. What is your gender? (Please circle one answer).

    Male   Female

38. What is your age? (Please circle one answer).

    18-24 years old   25-34 years old

    35-44 years old   45-54 years old

    55-64 years old   65-74 years old

    75 years or older

39. What is your ethnicity? (Please circle one answer).

    Caucasian/White   African American/Black

    Hispanic/Latino   Native American/American Indian

    Asian / Pacific Islander   Other

40. What is your highest level of education? (Please circle one answer).

    Some high school or less   Some college

    Graduated high school   Graduated college

    Vocational/technical school   Post-graduate study

Thank you for your time and willingness to participate in this study.